November, 2002

Supporting Statement for a Request for OMB Review Under the Paperwork Reduction Act

1. IDENTIFICATION OF THE INFORMATION COLLECTION

1(a) Title of the Information Collection

TITLE: Toxic Chemical Release Reporting, Recordkeeping, Supplier Notification and Petitions under Section 313 of the Emergency Planning and Community Right-to-Know Act

EPA ICR No.: 1363.12

OMB Control No.: 2070-0093

1(b) Short Characterization

This Information Collection Request (ICR) is for the information collection requirements for toxic chemical release reporting under section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) (42 U.S.C. 11001 *et seq*.) and the information collection in section 6607 of the Pollution Prevention Act (PPA) (42 U.S.C. 11071 to 11079). In short, EPCRA §313 requires certain owners or operators of certain facilities (i.e., currently manufacturing facilities in Standard Industrial Classification (SIC) codes 20 through 39, and facilities in SIC codes 10 (except 1011, 1081, and 1094), 12 (except 1241), 4911, 4931, 4939 (limited to facilities that combust coal and /or oil for the purpose of generating power, 4953 (limited to facilities regulated under the Resources Conservation Recovery Act, subtitle C, 42 U.S.C. section 6921 et. seq.), 5169, 5171, 7389 (limited to facilities primarily engaged in solvent recovery services on a contract or fee basis) manufacturing, processing, or otherwise using any of over 600 listed toxic chemicals and chemical categories (hereafter "toxic chemicals") in excess of the applicable threshold quantities to report on their environmental releases and transfers of and waste management activities for such chemicals annually. Under section 6607 of the PPA, facilities must provide information on the quantities of the toxic chemicals in waste streams and the efforts made to reduce or eliminate those quantities.

Currently, facilities subject to the Toxics Release Inventory (TRI) reporting requirements may either use the EPA Toxic Chemical Release Inventory Form R (EPA Form #9350-1), or the EPA Toxic Chemical Release Inventory Form A Certification Statement (EPA Form #9350-2, which is approved under OMB Number 2070-0143). The Form R must be completed if a facility manufactures, processes, or otherwise uses any listed chemical above threshold quantities. For the Form A Certification Statement, EPA established an alternate threshold for those facilities with low annual reportable amounts of a listed toxic chemical. A facility that meets the appropriate reporting thresholds, but estimates that the total annual reportable amount of the chemical does not exceed 500 pounds per year, can take advantage of an alternate manufacture, process, or otherwise use threshold of 1 million pounds per year for that chemical, provided that certain conditions are met, and submit the Form A Certification Statement instead of the Form R. Facilities may submit information on multiple chemicals on a single Form A Certification Statement.

In accordance with EPCRA section 313 (and PPA section 6607 because of its linkage to EPCRA), EPA's Office of Environmental Information (OEI) collects, processes, and makes available to the public all of the information collected. The information gathered under these authorities is stored in a database maintained at EPA and is available through the Internet. The TRI is used extensively by EPA, other federal, state and local government agencies, industry, and the public. Program offices within EPA and other government agencies have used the TRI, along with other sources of data, to establish priorities, evaluate potential exposure scenarios, and for enforcement activities. Industries use TRI data to identify pollution prevention opportunities, and set goals for emissions reductions. Environmental and public interest groups use TRI data to make the public more aware of releases of chemicals in their communities, and to initiate direct negotiation and risk reduction with facilities.

With TRI, and the real gains in understanding it has produced, communities and governments know what listed toxic chemicals many industrial facilities in their area release, transfer, or otherwise manage as waste. In addition, industries have an additional tool for evaluating efficiency and progress on their pollution prevention goals.

OMB last approved this Information Collection request in January, 2001 with an expiration date of January 31, 2003. The existing reporting and recordkeeping requirements associated with Form R, supplier notification and petitions are discussed in this ICR (EPA ICR #1363), which is separate from the ICR related to the alternate reporting requirement of the Form A Certification Statement (EPA ICR #1704). The reporting and recordkeeping requirements associated with the alternate reporting requirement using the Form A Certification Statement are contained in a separate ICR and are approved under OMB Control #2070-0143 (EPA ICR #1704). OMB last approved the Form A Certification Statement ICR on January 18, 2001 for use through January 31, 2003. Please note that these two ICRs function entirely separately, such that the OMB action taken with regard to EPA ICR #1704 applies only to the alternate reporting requirements and the Form A Certification Statement, and that any OMB action taken with regard to the Form R ICR (EPA ICR #1363), will apply only to the existing reporting and recordkeeping requirements associated with Form R, supplier notification and petitions.

As specified by 5 CFR 1320.12(a)(1), EPA issued a Federal Register notice on July 1, 2002 (67 FR 44213), which sought comments on the renewal of this ICR as required by 5 CFR 1320.8(d) regarding the burden estimates and the information collection activities described in the proposed ICR. EPA has reviewed the comments received during the 60 day comment period and has included its review as ATTACHMENT G. The proposed revised Form R, which includes the e-mail address field for the facility technical contact, is included in this document as ATTACHMENT F. This modified Form will not become effective until OMB approves it.

Estimates of the burdens imposed as a result of the final TRI PBT rule and the final TRI Lead rule have been incorporated into the burden and cost estimates found in Section 6 of this ICR, ESTIMATING THE BURDEN AND COST OF THE COLLECTION. A copy of the ICR

amendment for the final rule, Reporting Threshold for PBT Chemicals (EPA ICR 1363.10), is included as Attachment H and a copy of the ICR amendment for the final rule, Reporting Threshold for Lead (EPA ICR 1363.11), is included as Attachment I.

2 NEED FOR AND USE OF THE COLLECTION

2(a) Need/Authority for the Collection

This information collection activity is a statutory requirement pursuant to sections 313 of EPCRA (42 U.S.C. 11001 *et seq.*) and section 6607 of the PPA (42 U.S.C. 11071 to 11079). According to EPCRA section 313(h), the data submitted in the forms are intended to "inform persons about releases of toxic chemicals to the environment; to assist governmental agencies, researchers, and other persons in the conduct of research and data gathering; to aid in the development of appropriate regulations, guidelines, and standards; and for other similar purposes."

Section 6602 of the PPA establishes a national policy that pollution should be prevented or reduced at the source whenever feasible. To further this goal, EPA is to establish a source reduction program which, among other responsibilities, is to collect and disseminate information. The information collected under section 6607 is intended to fulfill that responsibility in part and to provide a basis for measuring progress in pollution prevention in certain industrial groups.

Annual reporting under EPCRA section 313 of toxic chemical releases and other waste management information provides citizens with a more complete picture of the total disposition of chemicals in their communities and helps focus industries' attention on pollution prevention and source reduction opportunities. EPA believes that the public has a right to know about the disposition of chemicals within communities and the management of such chemicals by facilities in covered industries subject to EPCRA section 313 reporting.

Current TRI reporting has been successful in providing communities with important information regarding the disposition of toxic chemicals, and other waste management information on toxic chemicals from manufacturing facilities in their communities.

The information collected under EPCRA section 313, and subsequently distributed through EPA outreach and awareness programs, is provided at relatively low cost compared to the value it represents to the general public. Through mass mailings to all facilities within the manufacturing sector of the economy, work with a wide variety of trade associations representing covered industries, local and national seminars, training courses, and enforcement activities, EPA has endeavored to locate all facilities required to report under section 313 of EPCRA and inform them of their obligations. In addition, EPA has prepared various tools to assist facilities in

complying with EPCRA. These materials include detailed reporting instructions, a questions and answer document, magnetic media reporting instructions, general technical guidance, and 24 industry and chemical specific guidance documents. In addition, EPA maintains a toll-free hotline to answer regulatory and technical questions to assist facilities in preparing TRI reports.

Furthermore, TRI reporting does not require a rigid, one-size fits all approach to estimating and reporting release information. EPA believes the submitters of the TRI data are best informed to honestly and accurately report information, within certain parameters provided by EPA. The Agency believes in the good intent of the reporters to use the most appropriate means to accurately estimate the release information. EPA does, however, also invest in enforcement and compliance efforts to insure that reporting is being done consistently and thoroughly by regulated industries.

2(b) Use/Users of the Data

According to many, the TRI program is one of the most effective environmental programs ever legislated by Congress and administered by EPA. Its success is due, in large part, to the right-to-know provisions contained in the legislation itself. By requiring that the resulting data be made publicly available "by electronic and other means," Congress ensured that citizens, the media, environmental advocates, researchers, the business community, and others could influence and evaluate industry's efforts to manage toxic emissions. Consequently, data collected under EPCRA section 313 and section 6607 of the PPA is made available through EPA's Envirofacts and TRI Explorer databases. In addition, the public may also obtain TRI information through OMB Watch's Right-to-Know Network (RTK NET) at http://www.rtk.net. RTK NET provide free public access to numerous databases, text files and conferences on the environment, housing, and sustainable development.

In addition to providing information to the public via electronic means, EPA also conducts outreach activities to make key groups and the public aware of TRI. Journalists, educators, public interest, labor, and environmental groups, trade associations, and state governments continue to be key targets in these outreach efforts. In addition, libraries in communities all across the U.S. (in particular, members of the Federal Depository Library Program), are committed to providing public access to TRI data in a variety of formats. Educators are also using the data to conduct studies and courses on the environment. Labor unions are using the TRI data to improve conditions for workers. Businesses are using the data in many ways -- as a basis for reducing emissions, to cut costs, to improve operations, and for a variety of other reasons. Concerned citizens are a growing user group. These individuals, on their own and through organized groups, are using TRI to address concerns about the management and release of chemicals in their communities. Finally, states use the national data to compare chemical management and releases within industries and to set environmental priorities at the state level.

Because the value of TRI increases as more people use it, EPA encourages these organizations to acquaint new users with TRI, help people who already know about TRI to better use and understand the data, and, whenever possible, provide feedback on how to improve TRI products and services. The following are some examples of how the TRI data are used, both by EPA and others. As examples, the following information is not intended to be all inclusive.

Government Use

Environmental Solutions

Government agencies can take a variety of actions when TRI data reveal an environmental problem in a specific state or region. Some of these actions involve voluntary incentive programs for companies. Although these programs are not binding commitments, they offer good publicity for participating companies. Examples include:

Governor Frank O'Bannon of Indiana announced the Indiana Governor's Toxics Reduction Challenge in 1998. The challenge pledged to "support the state's goal to reduce toxic chemical releases to the air and water from 1995 levels: 50% by December 31, 2000, in large urban areas for carcinogens and persistent bioaccumulative toxic chemicals; 60% by December 31, 2002 statewide for these chemicals; and, 50% by December 31, 2002, statewide for all toxic chemicals reported in the Toxics Release Inventory." The Challenge also pledged to "energetically help the state reach these goals through efforts emphasizing pollution prevention within your organization and/or in cooperation with other organizations." As of mid-April 2000, 67 companies in Indiana had committed to the Challenge. A list of the companies and an update on their progress is available on the Indiana state website: (http://www.in.gov/idem/).

The EPA "33/50 Program" targeted 17 priority TRI chemicals for 33 percent and 50 percent reductions from 1988 release levels, to be attained by 1992 and 1995, respectively. More than 1,200 companies nationwide joined the Program, which provided several forms of recognition to participating companies. The Program reached both its interim 33 percent reduction goal and its final 50 percent reduction goal one year earlier than planned.

The P2 Program of the Colorado Department of Public Health and the Environment used TRI data, in combination with other data about hazardous waste and toxic chemical releases to air and water, to identify the ten industry organizations responsible for the largest quantities of hazardous waste generation or toxic chemical releases in the state. This research served as the basis for establishing priorities for P2 activities and for distribution of technical assistance grants. The report also aided in targeting large companies for participation in the "Governor's P2 Challenge Program" to reduce toxic chemical releases and hazardous waste generation.

Due to the new TRI reporting requirements for dioxin, the Delaware Department of Natural Resources and Environmental Control became aware of dioxin-tainted waste at DuPont's Edge Moor, DE titanium dioxide (TiO_2) plant. Subsequently, DuPont agreed to pay an estimated $15 million to remediate dioxin-tainted waste at this facility. DuPont discovered that the waste sludge was contaminated with dioxin while the company was preparing to comply with EPA's requirement that dioxin releases be reported under TRI. In addition, DuPont agreed with the Delaware Department of Natural Resources and Environmental Control to spray a 23-acre stretch along the Delaware River with a starch-like coating to keep the dioxin from being stirred up by the wind or eroding into the river. DuPont used the site to store waste sludge from the Edge Moor plant. The company will also close four sludge lagoons near the plant and plans to cut dioxin formation in half by 2003 and by 90 percent by 2007.

Environmental Targeting

Budgets to fund environmental programs and measures often do not increase in proportion to the need for these activities. Environmental targeting initiatives, such as those listed below, help governments and communities prioritize their needs and ensure that their resources are used most efficiently.

The P2 Division in Georgia's Department of Natural Resources used TRI data to identify the technical assistance needs of manufacturing sectors generating chemicals that pose the greatest risk to public health and the environment. The Division prioritized chemicals, examined manufacturing sectors releasing the highest priority chemicals, and identified particular subsectors for further assessment. The Division also conducted in-depth manufacturing sector assessments to determine which processes produce which wastes, what multi-media waste problems exist, what P2 activities were being undertaken, and what additional opportunities might exist.

The Florida Waste Reduction Assistance Program provides assistance in source reduction and waste minimization to facilities handling TRI chemicals. The Program relies on TRI and other data to target facilities for the Program.

EPA's Office of Enforcement and Compliance Assurance (OECA) uses TRI data within its Online Tracking Information System (OTIS) -- a collection of on-line search engines that enables EPA staff, state, local, and tribal governments, and federal agencies to access a wide range of data relating to enforcement and compliance. Data on the OTIS site are from OECA's Integrated Data for Enforcement Analysis (IDEA) system, which extracts and integrates information from TRI as well as the following databases: AFS (Clean Air Act -- AIRS Facility Subsystem), PCS (Clean Water Act -- Permit Compliance System), RCRAInfo (Resource Conservation and Recovery Act Information System), the Federal Enforcement Docket, National Compliance Database (NCDB), and the 1990 U.S. Census. OTIS can be used for many functions, including program planning, enforcement targeting, sector and geographic analyses, data quality review, and pre-inspection review. OTIS is currently restricted to registered users from governmental organizations.

However, the public release of OTIS in May 2002 has been announced. As of March 2002, all states, all EPA Regional Offices, and another 90 local, state and federal governmental organizations are registered.

For the purpose of targeting exposure screening for facility employees in certain geographic areas, the U.S. Occupational Safety and Health Administration (OSHA) and local public health departments used TRI data to identify facilities that release specific chemicals.

Legislation and Regulations

TRI data often provide the impetus for legislative action from federal, state, and local governments. For over a decade, TRI data has been used to influence and change environmental standards, regulations, and legislation, as shown below:

The North Carolina Environmental Management Commission set limits for 105 pollutants after a public interest organization published a report, using TRI data, on unregulated toxic chemical releases to air in the state.

In response to legislation passed in 1987 to address toxic chemical releases to the air, the Illinois EPA Bureau of Air used TRI data to determine quantities of stack and fugitive air emissions of reported substances to support continued development of regulatory proposals.

Risk Assessment

As the connection between toxic chemicals and human health becomes better known, public health officials are looking for ways to assess the levels of risk in their communities. TRI data have been a crucial component in creating tools to address these assessments. Examples follow:

The New York State Department of Health developed a risk screening protocol using TRI air release data and toxicity potency data to produce relative risk scores and rankings for facilities and chemicals within the state. Results suggested the need for a more careful evaluation of health effects resulting from large releases of noncarcinogenic compounds.

Researchers from EPA's Office of Health Research published a study of national and regional differences in county-level TRI chemical releases to air according to the ethnicity or race and in conjunction with the household income of these populations. Using the "Population Emissions Index," a population-weighted average release for each county, the study found that all minority groups except Native Americans tend to live in counties where levels of TRI chemical releases to air are higher. The data also suggest that household incomes tend to be higher in counties with higher TRI chemical releases to air.

The EPA Office of Pollution Prevention and Toxics's Risk-Screening Environmental Indicators Model provides year-to-year indicators of the potential impacts of TRI chemical releases on human health and the environment. The indicators consider TRI release and transfer volumes, chronic toxicity, exposure potential, and the size of receptor populations. Both generic and site-specific exposure characteristics can be incorporated in the model. The model allows the targeting and prioritization of chemicals, industries and geographic areas. Facility scores can also be tracked from year to year to analyze trends.

Quality Assurance and Control

Some states, such as Massachusetts, that require separate reporting of toxic chemical releases for their facilities, find TRI data to be a useful measure of quality assurance and control. The Air Pollution Control Program in the Missouri Department of Natural Resources also compares fugitive and stack emissions reported to the TRI with toxic chemical release data reported on the state's Emissions Inventory Questionnaire for quality control.

Other Government Uses

Additional governmental uses of TRI data can be found in agencies not immediately associated with environmental issues. The U.S. Internal Revenue Service used TRI data to identify companies releasing chlorofluorocarbons (CFCs) to enforce a tax imposed on releases of CFCs and thus facilitate the phase-out of these chemicals.

Public Use

Each year, the EPA makes TRI data available to the public on two Internet sites: TRI Explorer (www.epa.gov/triexplorer) and Envirofacts (www.epa.gov/enviro). The EPA also provides a summary of national and state data in the annual publications *Toxics Release Inventory: Public Data Release* and *Toxics Release Inventory: Public Data Release: State Fact Sheets*. States also release their own reports. Community organizations, universities, workers and labor unions, local public interest organizations, and national non-governmental organizations (NGOs) also conduct analyses and risk assessments based on TRI data. Some of these organizations also make data and analyses available to the public.

Citizen Activists and Community Organizations

Citizen activists and community organizations educate their communities about toxic chemical releases using TRI data, often combining education with a call to action. Some community organizations have used TRI data to initiate discussions with local industries or to call on local and public interest organizations to lobby for their causes. Local public interest organizations improve citizen environmental awareness, encouraging them to become involved in the environmental health of their communities. Members of a local public interest organization

can be of technical and legal help to citizens in the field of environmental negotiation. Examples of citizen activists and community interest organizations and the ways in which they use TRI data follow:

The Eugene Toxics Right-to-Know program, a local grassroots organization in Eugene, Oregon, used TRI as a model to develop the first city right-to-know program. This program gives citizens information, to the kilogram level, about toxic material use and materials accounting information. Voters adopted the program in 1996 as an amendment to the Eugene City Charter. A citizen initiative placed the amendment on the ballot. Previously, information concerning the use of hazardous substances in the community, and the releases of those substances into the local environment in particular, was not readily accessible to citizens under existing reporting regulations. Unlike other hazardous substance reporting programs, the Eugene charter amendment requires affected businesses to provide materials balance accounting. In other words, inputs and outputs of hazardous substances must be reported and must balance. These reports, required annually, are available in an accessible format at the Eugene Public Library. For more information, or to view the database, go to: http://www.ci.eugene.or.us/firedept/Toxics/toxicsb.htm.

South Carolina Environmental Watch is an environmental organization that educates communities about toxic chemicals and their possible health effects. The organization presents TRI data to communities and discusses the potential effects of toxic chemical releases.

The Louisiana Environmental Action Network (LEAN) was formed over a decade ago to educate and provide a voice for residents concerned about toxic chemical releases from local facilities. LEAN uses TRI data to help residents become aware of risks associated with toxic chemical releases and to facilitate discussions between communities and industries to evaluate the impact of those releases. LEAN "encourages community decision-making and legislative challenge in neighborhoods near toxic chemical sites. The organization locates waste disposal sites, dumps and industrial facilities that could potentially affect communities, and compiles TRI, accident release data, and state groundwater data on these types of sites. The resulting data compilations are then used as the spearhead of strategic campaigns directed at making changes at the legislative level." LEAN publicizes its information in the form of "briefing books," which it presents to members of the Louisiana House and Senate environmental committees. These reports "can be the starting points for change. The goal is to build a knowledge base for legislators and communities and to raise awareness of local environmental problems.... In one case, a briefing book was compiled for neighborhoods near a railroad switchyard, where leaking valves on the chemical transport cars stored there overnight were found to have contaminated groundwater. The chemicals included styrene, perchloroethylene, benzene, toluene, hexachlorobenzene, hexachlorobutadiene, and vinyl chloride."

California facilities are required to develop and make public P2 plans under the state Hazardous Waste Source Reduction and Management Review. A community organization called

"The Mothers of East Los Angeles of Santa Isabel" used TRI data to compare toxic chemical release estimates listed in P2 plans submitted by facilities to their actual releases.

The Oneida Environmental Resources Board in Wisconsin used TRI data to convince leaders of the Oneida Tribe to organize a conference on cleaner ways to manufacture pulp and paper. The Board used TRI data to show that the pulp and paper industry was the largest industrial source of toxic chemical releases in Wisconsin, despite industry claims that significant release reductions in the past made further improvements unnecessary. The conference improved industry awareness of more environmentally friendly practices and procedures. The Board also used TRI data to alert a local labor union about possible worker health risks. The union included requests for reductions in toxic chemical releases in its contract renewal negotiations.

California's Silicon Valley Toxics Coalition has used TRI data for over a decade. The *Silicon Valley Environmental Index* (www.svep.org) shows "sustainability trends" in Santa Clara County, California. The *Index* provides information about, but not limited to, hazardous materials and air and water quality. At least five cities in Santa Clara County have referenced or relied on the *Index* as the basis for their "sustainable city" efforts or municipal environmental management system (EMS) initiatives. Private-sector companies, such as IBM and Philips Semiconductor, have also used the *Index* in evaluating their own EMS practices. Several universities have incorporated the *Index* into their environmental science course curricula. In addition, several states (Wisconsin, South Carolina, New Jersey) and countries (Germany and the Netherlands) have developed regional environmental indicators studies modeled after the *Index*.

Wilma Subra, a chemical research analyst in Louisiana, has been a vocal citizen leader and an active proponent of the TRI program for 20 years, working to change regulations and policies to improve public health and the environment at the local level. Ms. Subra has informed residents about the possible effects of toxic chemical releases and has aided their work to improve environmental conditions. The TRI data support Ms. Subra's efforts to reduce toxic chemical releases from Louisiana's industrial facilities. Ms. Subra gathers and analyzes TRI data, distributes information to the public, participates in legal and regulatory processes against industrial facilities, and sits on national and international advisory committees.

National Organizations

National organizations employ TRI data in many of the same ways as small community organizations, but on a larger scale. Such organizations analyze TRI data, use it to conduct risk screening and risk assessment, and often help the public interpret the data. National organizations often work with local public interest and community organizations to initiate discussions between

citizens and industry. Some national organizations also use TRI data to help lobby for changes in environmental policy. Examples of the use of TRI data by national organizations include the following:

Environmental Defense (ED) launched its Scorecard website in1998 (http://www.scorecard.org). The site's "polluter locator" allows users to perform a search by ZIP code on a database containing information on more than 17,000 chemical-releasing facilities. The Scorecard also provides data on the health effects and regulatory status of different chemicals. The site correlates TRI chemical release data with U.S. Census demographic data. ED is currently linking TRI data with toxicological studies to create a Scorecard tool that compares the risks of different toxic chemical releases. Logging 500,000 data requests on its first day of operation, the Scorecard website has drawn significant public interest.

The Right-to-Know Network (RTKNet) website (http://www.rtknet.org), launched in 1989 by the nonprofit organizations OMB Watch and the Unison Institute, also facilitates public access to TRI data. Users can search the TRI data by ZIP code, city, county, state, year, or chemical. The website also includes links to additional information about chemicals and right-to-know issues. RTKNet estimates that about a quarter of a million searches are performed on the site annually.

The former Environmental Information Center conducted a study of the Great Lakes in 1997. Scientists used TRI data to examine endocrine disrupters released in states bordering the Great Lakes. The study ranked the largest emitters of various classes of toxic chemicals by region, and found the Great Lakes region to be the nation's top emitter of reportable endocrine disrupting chemicals.

In September 2000, Physicians for Social Responsibility, along with the National Environmental Trust and the Learning Disabilities Association of America, released the report, "Polluting Our Future: Chemical Pollution in the U.S. that Affects Child Development and Learning" (www.psr.org/trireport.pdf). This report used TRI and other data to present national information about releases of chemicals that present potential developmental and neurological risks. The report ranked states by the amount of releases of these chemicals and included information about counties, industries, and facilities with the highest toxic chemical releases.

Labor unions also have used TRI data to support demands for safer working conditions for employees. Other than citizens who live near facilities, employees of TRI reporting facilities are most at risk from toxic chemical releases because they are most likely to come in regular contact with these chemicals. Beginning in 1990, the International Union, United Automobile, Aerospace & Agricultural Implement Workers of America (UAW) began training employees and managers of UAW companies to access, interpret, and utilize computer databases and programs in "critically assessing industrial emergency response activities at their facilities." Workers were trained to download and interpret environmental compliance data. TRI data was one of the main

sources of information for the program. Concerning TRI, the UAW stated, "knowing about maximum amounts on-site can help people prepare for a 'worst-case scenario.'" It can help an emergency response planning group decide if there is enough response equipment and personnel to deal with an emergency involving the chemical(s) in question."

Direct Negotiation

Through increasing their understanding of TRI data, members of the public can begin to understand potential risks associated with toxic chemical releases in their communities and can work with facilities to reduce those risks. The nation's first "right-to-act" law was enacted in September 1999 by the Passaic, N.J., Board of Chosen Freeholders, the county's governing body. The law "allows neighbors and/or employees to petition the county health officer for creation of Neighborhood Hazard Prevention Advisory Committees (NHPACs) for specific facilities." Even without the aid of this law, concerned citizens nationwide can take action in their own communities. Community organizations and citizen activists have used TRI data to negotiate with local facilities. Examples of direct negotiation agreements between citizens and facilities follow:

In the city of Richmond, California, community members were concerned about toxic chemical releases from several oil refineries and other large industrial facilities. The West County Toxics Coalition, a local environmental organization, joined with Communities for a Better Environment, a statewide environmental organization, to investigate industrial polluters in Richmond. Using the TRI and other databases, they published the report, *Richmond at Risk*, that identified the area's 20 largest industrial polluters and named the Chevron oil refinery the number one polluter. The report served to initiate discussions among Chevron, the West County Toxics Coalition, and other community and environmental organizations. As a result of the meetings, the company agreed in 1994 to close down older portions of the plant and install P2 equipment to achieve zero net toxic chemical releases on its reformulated fuel project.

The Calhoun County Resource Watch (CCRW), founded by a Texas environmental activist and shrimper named Dianne Wilson, used TRI data to build community awareness about pollution of the rich shrimp and oyster breeding grounds of Lavaca Bay on the Gulf of Mexico. Calhoun County was ranked first in the nation for toxic chemical disposal to the land, based on the 1987 TRI data. Lavaca Bay was designated as a Superfund site in 1993. CCRW brought suit against the Aluminum Company of America (Alcoa) related to this pollution. In 1995, Alcoa signed an agreement designed to protect the breeding grounds. Two Alcoa firms, a chemical plant and a bauxite refinery, committed to "fund independent review of zero discharge options and to adopt the technologies where technically, economically, and environmentally sound." In return, CCRW agreed to drop its legal challenges and suspend permit interventions against the companies. According to an Alcoa operations manager, as of March 2000 the company had made considerable progress toward the goals set in 1995, including compliance with a permit that sets the "allowed total annual maximum mass loading mercury limit" at 30 pounds, development and

implementation of a Best Management Practices plan, and installation of an "evaporative spray and dust control system" near the refinery.

In 1998, Butler County, PA, warned pregnant women and infants against drinking water from Connoquenessing Creek due to high levels of nitrates in the water. In its report, the Pennsylvania Public Interest Research Group (PennPIRG) used TRI data to highlight the significant quantities of nitrate compounds being released into the creek. The report identified the major source of the nitrates as the AK Steel Corporation. TRI data showed that the company had discharged approximately 29 million pounds of nitrates into the creek in 1997 and 32 million pounds in 1998. This report and several newspaper articles about these toxic chemical releases prompted the state to commit to reduce the levels of nitrates that AK Steel is permitted to release into the creek. Pennsylvania began developing a new water permit to reduce allowable nitrate releases to a level 90 percent lower than the previous level. In June 2000, EPA issued an emergency order requiring AK Steel to significantly reduce the nitrate compounds it discharges into Connoquenessing Creek. In addition, AK Steel was required to provide and pay for an alternative water source for the affected public on any day that the local water plant could not meet the federal maximum nitrate contaminant standard.

Working with The Ecology Center, a public interest organization based in Ann Arbor, Michigan, residents of the town of Flat Rock used TRI data to obtain a commitment from Auto Alliance International to enact an aggressive solvent reduction program. TRI data showed that the company's air releases of toluene had increased from 100,000 pounds in 1991 to 800,000 pounds in 1993, along with an increase in noxious odors in the community. A former Ecology Center staff member, Andrew Cormai, said, "[R]esidents who have put up with the smells since 1987 suddenly have a bone to pick with the company. The company is going to be saving some money by recapturing solvents, and they will be improving community air quality."

Environmental Justice

The goal of environmental justice is to ensure that all people, regardless of race, national origin, or income, are protected from disproportionate impacts and environmental hazards. "The concept [of environmental justice] addresses evidence [that] in some parts of the nation, poor and minority communities live closer to factories, highways and airports and are exposed to more pollution and noise and generally more environmental risks than the population at large." TRI data have proved to be an important tool in environmental justice. Communities that were once uninformed about the toxic chemical releases in their area now have access to that information. Examples of TRI data use in environmental justice activities include:

Two areas of Louisiana have become focal points for environmental justice efforts: the Mississippi River corridor, popularly known as "Cancer Alley," and the Lake Charles region. Local groups have used TRI data to illustrate the high toxic chemical release rates in these areas compared to those in other regions. Several small communities have confronted industrial

facilities about their toxic chemical releases and possibly related health effects. One illustrative dispute arose in Mossville, Calcasieu Parish, Louisiana, where some residents suspected that poor health in their community was due to the activities of 17 industrial facilities located within one half-mile of the community. Their concerns prompted numerous public interest organizations to collaborate on the report, *Breathing Poison: The Toxic Costs of Industries in Calcasieu Parish, Louisiana*. The 2000 report used TRI data and information from the Scorecard website to convey the health risks to which the community might be exposed. It stated the need for "pollution reduction, environmental health services, and a fair and just relocation for consenting residents."

The Asian Pacific Environmental Network (APEN) works with Asian and Pacific Islander communities in the San Francisco Bay Area, California. APEN created a series of maps that combined TRI and demographic data, to show that many poor Asian and Pacific Islanders live in "toxic hot spots." The maps increased awareness among community members about both their environment and environmental justice issues. APEN might add more environmental, health, and demographic information, and expand its mapping work to other nearby counties.

The Los Angeles chapter of Communities for a Better Environment used TRI data to help ensure that the communities it serves would not be exposed to higher environmental risks as a result of poverty or ethnicity. In one project, the organization combined 1996 TRI data with Geographical Information System (GIS) mapping data to show that 80 to 100 percent of facilities that release toxic chemicals in Los Angeles County were located in areas where a large majority of the residents were people of minorities. These findings led to the report, *Holding Our Breath – the Struggle for Environmental Justice in Southeast Los Angeles.*

Industry Use

Although Congress intended the public to be the primary audience for TRI data, the TRI has also benefitted industries.

Cost Reduction

A primary goal of the International Organization for Standardization (ISO 14000) is to bring environmental issues to the attention of the highest levels of corporate management. Leaving decision-making to environmental managers alone might not produce the corporate commitment necessary to achieve the best success. TRI data have been used as evidence to convince high-level management of the need for an EMS. In turn, the proactive environmental protection afforded by an EMS can reduce corporate costs.

For some industries, the creation of the TRI marked the first time that company managers and operators could be made aware of the quantity of chemicals being released from their facilities. Initially, some companies expressed surprise at their own toxic chemical release ratings and set goals to improve their environmental performance. Some companies have reduced their toxic chemical releases and increased their efficiency at the same time, leading to an increased profit. Examples of ways that industry has used TRI data to reduce costs follow:

After reporting toxic chemical releases to the TRI, Berg Electronics realized that it was releasing almost 300,000 pounds of toxic chemicals into the environment annually. By installing a new cleaning system, the company reduced its toxic chemical releases to less than 400 pounds per year. Although the initial costs for the new system were relatively high ($500,000), the company was able to save approximately $1.2 million a year by avoiding cleanup and hazardous waste disposal costs.

The Haartz Corporation, located in Acton, Massachusetts, makes coated fabrics used in automobiles. The firm once used 800,000 pounds per year of methyl ethyl ketone (MEK), a solvent that can cause dizziness, nausea, or unconsciousness when inhaled. In 1987, when the Haartz Corporation was preparing its first TRI report, the company installed a new emissions control system to capture and recycle MEK. TRI data enabled the company to track the association between reduced toxic chemical releases and reduced costs. According to the Haartz Corporation environmental manager, the company's "emissions have stayed pretty flat" despite its "double-digit sales growth" between 1993 and 1998. In addition, reducing its MEK releases saved the Haartz Corporation an estimated $200,000 annually.

International Right-to-Know

The TRI has served as the model for many countries' Chemical Right-To-Know programs and laws. Within the next few years, more than 30 nations are expected to have a TRI-like system, known internationally as Pollutant Release and Transfer Registers (PRTRs). PRTRs allow the public to obtain toxic chemical release data covering a large geographic area. Countries can compare their data and share ideas about improving environmental regulations. Examples of how PRTR information is being used include:

The Commission for Environmental Cooperation (CEC), which was created by a side-agreement to the North American Free Trade Agreement (NAFTA), began its PRTR work by preparing a document that compares U.S. and Canadian PRTR systems. The CEC now develops an annual report, entitled "*Taking Stock*", that correlates data from the TRI and the Canadian National Pollutant Release Inventory to give an overall view of releases and transfers of toxic chemicals within and between countries. The CEC also has created an Internet search engine that allows the public to obtain continental PRTR data.

In 2000, the Silicon Valley Toxics Coalition attended an international conference in Croatia on public participation and community right-to-know. Participants recognized the fundamental importance of Chemical Right-To-Know and are lobbying the United Nations to promote the program and persuade nations to support the passage of community right-to-know laws modeled after the TRI.

Investment

The public's increased awareness of environmental issues has made environmental performance an important factor in their investment decisions. Many investment companies have responded to this demand by providing socially responsible investment options. Examples of how TRI data have been used in investment decisions include:

Green Century Funds, an investment organization that specializes in socially responsible mutual funds, offers two funds committed to promoting corporate environmental responsibility. The Green Century Balanced Fund invests in "performance-driven companies that are a part of the solution to environmental problems," as well as in environmentally benign companies and "best of class" companies that are setting standards for environmental protection in their industries. The Green Century Equity Fund screens out companies with the worst environmental and social records. The funds are monitored for environmental performance using TRI data.

Vanderbilt University's Owen Graduate School of Management found a correlation between a company's stock value and its P2 efforts, which were assessed using TRI data. A researcher from the University performed two separate studies comparing the progress of a company's P2 activities as reported on TRI forms to a company's stock market performance. The study reported that "companies that underperform expected pollution prevention goals are penalized in the stock market, and the stock of the companies that engage in pollution prevention activity tends to outperform the stock of companies that do not engage in pollution prevention."

Using TRI data, the Investor Responsibility Research Center (IRRC) developed an Emissions Efficiency Index® that indicates which companies have a competitive edge in environmental performance. The Index is predicated on the idea that greater toxic chemical releases are associated with higher risks of negative publicity, more tort actions, and higher costs for pollution control and waste management. IRRC's constituency uses TRI-based information to identify companies with poor environmental records. Using the index, investors can either screen such companies out of their portfolios or purchase shares and use their ownership as leverage to improve environmental performance.

Academic Use

A variety of TRI data applications occur in academia, in areas ranging from doctoral theses and journal publications to teaching in the classroom.

Research

Universities and research institutions are using TRI data as a means for "examining environmental policies and strategies, and clarifying risks associated with toxic chemicals at the state and local level." Students and faculty in the academic community also perform studies based on TRI data. Examples of academic research using TRI data include:

In February 2000, the journal *Drug and Chemical Toxicology* published an article entitled, "Using GIS to Study the Health Impact of Air Emissions." This article showed how public health professionals are able to use data (such as the TRI) on toxic chemical releases to air, air dispersion modeling, and GIS to identify and define a potentially exposed population. In addition, such data can be analyzed to estimate the health risk burden of that population and determine correlations between point-based health outcome results and estimated health risk.

In the Journal of Environmental Economics and Management in 1998 and 1999, and in the Journal of Economic Surveys in 2001, researcher Madhu Khanna published results of research that examined the environmental, economic and investment effects of voluntary and mandatory toxic release reporting programs. One of the research studies focused on the EPA's 33/50 Program during its first three years, 1991-1993, and its impact on the U.S. chemical industry. The paper showed that Program participation led to a statistically significant decline in toxic releases over the time period, a statistically significant negative impact on current return on investment, but a positive and statistically significant impact on the expected long-run profitability of firms.

At Louisiana State University, environmental science professor Paul Templet developed a method, using TRI data, to evaluate the comparative effectiveness of pollution control strategies, policies, and programs, by calculating an "emissions to jobs ratio." This ratio, which is the number of pounds of toxic chemical releases per job in a given industry and location, can be compared to a national or other average. The comparison is then used to assess the relative toxic air releases associated with a certain job. This ratio was used to modify tax exemptions granted to facilities to encourage and reward job creation.

Professor Mark Stephan used TRI as the background for an academic paper focusing on the role of information disclosure programs in environmental policy. Professor Stephan used TRI as a prime example for the fundamental theories and concepts that underlie the empirical work on

the comparison of basic theories arising from the knowledge of economics, psychology, and politics.

Researchers R.D. Klassen and D.C. Whybark studied management of the natural environment in manufacturing firms, given increased public awareness and scrutiny as a result of programs like the TRI. In one of their published studies, it was found that an emphasis on pollution prevention instead of pollution control, improved delivery performance and firms'competitiveness.

Classroom Use

High school and university instructors have incorporated the TRI into curricula involving subjects ranging from introductory chemistry to business.

The JSI Center for Environmental Health Studies developed a field-based environmental education curriculum for high school students in Chelsea, Massachusetts, a low-income minority community near Boston. The goal was to encourage student participation in environmental assessment and protection. Students learned to inventory sources of contamination in a local creek and to work with community agencies on protecting a valuable environmental resource. TRI data were an integral part of the students' research.

Professor Robert Hognor of Florida International University incorporated TRI data into his classes in the Department of Business and Society. In one example, students used TRI data as the basis for assessing the potential impact of toxic chemicals in the Caribbean and then issued a report on the subject.

3. THE RESPONDENTS AND THE INFORMATION REQUESTED

3(a) Respondents/SIC Codes

The statute applied the reporting requirement to owners and operators of facilities that have 10 or more full-time employees, manufacture or process more than 25,000 pounds or otherwise use more than 10,000 pounds of a listed chemical, and are in Standard Industrial Classification (SIC) codes 20 through 39. The SIC code determination applies to all operations within each two-digit category, including all sub-categorizations to the four-digit level. In addition, in May, 1997, EPA issued a final rule that expanded the TRI reporting requirements to facilities in seven industries outside of the manufacturing sector. A detailed listing of the four-digit SIC codes and categories can be found in Table I of Attachment A (Toxic Chemical Release Inventory Reporting Forms and Instructions). The following identifies the SIC codes and corresponding categories at the two and four-digit level:

SIC Code	Industry Group
10	Metal Mining (except 1011,1081 and 1094)
12	Coal Mining (except 1241)
20	Food
21	Tobacco
22	Textiles
23	Apparel
24	Lumber and Wood
25	Furniture
26	Paper
27	Printing/Publishing
28	Chemicals
29	Petroleum
30	Rubber and Plastics
31	Leather
32	Stone, Clay, and Glass
33	Primary Metals
34	Fabricated Metals
35	Machinery (ex. electrical)
36	Electrical/Electronic Equipment
37	Transportation Equipment
38	Instruments
39	Miscellaneous Manufacturing
4911, 4931 or 4939	Electric Utilities (limited to facilities that combust coal and/or oil for the purpose of generating electricity for distribution in commerce.)
4953	Commercial Hazardous Waste Treatment (limited to facilities regulated under RCRA Subtitle C, 42 U.S.C. section 6921 et seq.
5169	Chemical Allied Products-Wholesale
5171	Petroleum Bulk Terminals and Plants-Wholesale
7389	Solvent Recovery Services (limited to facilities primarily engaged in solvents recovery services on a contract or fee basis).

Establishments that are part of a multi-establishment facility have the option to report separately, provided that all of the releases and waste management data from all of the establishments in that facility are reported.

3(b) Information Requested

(i) Data Items

Reporting Requirements for Form R. Form R consists of two major parts. Part I is for facility identification information such as the name, address, and other identifying information including permit numbers. Part II is for chemical-specific information, such as the identity, uses at the facility, quantification of the releases and off-site transfers of the chemical, on-site waste treatment methods and efficiencies, and the new source reduction and recycling data.

Form R - Part I. Part I contains five sections. The first section is for identification of the reporting year. The second section is for indication if the toxic chemical is claimed as a trade secret. The third section is a certification statement that must be signed by the owner or operator or a senior official with management responsibility for the person or persons completing the form.

The fourth section is for the identification of the facility, its location, and TRI Facility Identification Number. As part of the location information, EPA requires the facility to provide business-related specifics such as its Dun and Bradstreet number and the primary four-digit SIC code. This section also requires the number of the facility's National Pollutant Discharge Elimination System (NPDES) permit, if the facility has been issued one, the facility's underground injection control (UIC) code, and, if applicable, its EPA Identification number. The name and telephone number of the public contact, and the technical contact are also entered in the fourth section. In this ICR renewal (EPA 1363.12 and OMB Control No. 2070-0093), EPA is proposing to add an e-mail address field for the technical contact. The fifth section is for identification of the respondent facility's parent company, if applicable, and that parent company's Dun & Bradstreet Number.

Form R - Part II. Part II contains eight sections. The first two are for identification of the chemical or the mixture component. Respondents must identify the chemical or chemical category being reported by the listed name and by the Chemical Abstract Service (CAS) registry number, if applicable. If the facility claims that the specific chemical identity is a trade secret, the respondent must enter a generic name in Section 1.3.

The third section is for identification of the use or uses of the chemical: manufacture, processing, or otherwise use. The fourth section requires an estimate of the maximum amount of the chemical present at the facility at any time during the calendar year. Ranges identical to those implemented in Sections 311 and 312 are used.

The fifth section covers all on-site releases of the chemical to the environment. This includes fugitive and stack air emissions, discharges to streams or other water bodies, underground injection, and releases to land such as to landfills and surface impoundments. The respondent also is required to indicate the basis or technique for estimating those releases. When

reporting releases to water bodies, facilities report the name of the body along with the quantity released in Section 5.3.

EPA has subdivided section 5.4 into two parts: 5.4.1: underground injection into class I wells: and 5.4.2: underground injection into class II-V wells. Section 5.5.1, landfills, is subdivided into 5.5.1.A: disposal to RCRA subtitle C landfills and 5.5.1.B: disposal to other landfills.

The sixth section requires respondents to quantify all transfers of the chemical to publicly-owned treatment works (POTWs) and other off-site locations (including other wastewater treatment facilities, and recycling, treatment, or disposal facilities). Section 6 also requires the name and location of all POTWs and other off-site locations to which the chemical is sent for the purposes of recycling, treatment, or disposal facilities that accept chemical wastes from the respondent facility. For other off-site facilities, the RCRA ID number (if applicable) and an indication of whether each such facility is under the control of the reporting facility also is reported.

Section 7 of Form R consists of three subsections. Section 7A is for reporting on-site waste treatment methods and efficiencies. A characterization of the type of waste stream, the waste treatment method(s) applied to that waste stream, and the efficiency of those methods is required. Section 7B is for reporting the methods of energy recovery used on-site. Up to four codes identifying the appropriate activities can be entered. Section 7C is for reporting the methods of recycling used on-site. Up to ten codes can be entered.

Section 8 of the form is for reporting the majority of the source reduction and recycling information as mandated by section 6607 of the PPA. Beginning with the 1991 reporting year, Section 8 is a required section of Form R and must be completed. Section 8 reporting includes on-site and off-site quantities of the toxic chemical released (including disposal), used for energy recovery, recycled, or treated. Quantities are reported for both the current reporting year and the prior year, as well as quantities anticipated in both the first year immediately following the reporting year and the second year following the reporting year. In addition, Section 8 includes reporting on quantities of the toxic chemical released due to remedial actions, catastrophic events, or other one-time events not associated with production; a ratio of reporting year production to prior year production, or an activity index based on a variable other than production; source reduction activities implemented during the calendar year for the reported toxic chemical; and the method used to identify the source reduction activity. Facilities also must indicate whether additional optional information is being submitted on source reduction, recycling, or pollution control activities.

Proposed Change to Reporting Form R for 2001 Reporting Year. In the July 1, 2002 Federal Register notice (67 FR 44213), EPA requested comment on one change to the reporting Form R: the addition of a field in Part I, Facility Identification Information for the email address

of the facility technical contact person. EPA received public comments regarding this proposed change and has responded to those comments in Attachment G. None of the those who submitted comments were opposed to the addition of the data field, but some raised concerns regarding the protection of privacy. These concerns are responded to in Attachment G. A copy of the proposed Reporting Form R (EPA Form 9350-1) is included as Attachment F.

Reporting Requirements for the Form A Certification Statement. On November 30, 1994 (59 FR 61488), EPA promulgated the alternative threshold rule which allows a facility which manufactures, processes, or otherwise uses 1 million pounds or less of a chemical annually, and if 500 pounds or less of that chemical is present in their annual reportable release amount, then the alternate threshold reporting option, TRI reporting Form A Certification Statement, is available to that facility for a specific chemical. An annual reportable amount is defined as the combined total quantities released at the facility, treated at the facility (as represented by amounts destroyed or converted by treatment processes), recovered at the facility as a result of recycle operations, combusted for the purpose of energy recovery at the facility, and amounts transferred from the facility to off-site locations for the purpose of recycling, energy recovery, treatment, and/or disposal.

The reporting and recordkeeping requirements associated with the alternate reporting requirement using the Form A Certification Statement are contained in a separate ICR approved under OMB Control #2070-0143 (EPA ICR #1704).

Recordkeeping. Facilities must keep a copy of each Form R and Form A Certification Statement submitted for at least 3 years from the date of submission. Facilities also must maintain the documents, calculations, and other information used to prepare the reports. Documents and records that facilities keep to prepare a report submitted may include, but are not limited to:

- Prior years' Form Rs;
- Inventory data and purchase records;
- Process diagrams that indicate releases and waste management activities;
- Monitoring records;
- Flowmeter data;
- Manufacturer's estimates of efficiencies;
- Worksheets, engineering calculations, and other notes;
- NPDES permits and associated data;
- EPCRA Section 312 Tier II reports;
- Pretreatment reports when applicable;
- RCRA manifests;
- RCRA Hazardous Waste Generator's Report; and
- Invoices from waste management companies.

(ii) Respondent Activities

EPA makes Form R, the Form A Certification Statement, and detailed instructions and guidance documents available to owners or operators of facilities subject to the section 313 reporting requirements. In addition, a toll-free hotline is available to handle general and technical inquiries from the regulated community. Technical assistance also is available through the EPA Regional offices and States. The regulated community is expected to comply with the reporting requirements by completing either the Form R or the Form A Certification Statement and mailing it to EPA and the appropriate state agency. Section 313(g)(2) provides that a "facility may use readily available data (including monitoring data) collected pursuant to other provisions of law, or where data are not readily available, reasonable estimates of the amounts involved." Respondents are not required to develop new information. The following are the respondent activities and are briefly summarized below:

- Compliance Determination
- Report Completion (Compliance)
- Substantiation of a Trade Secret Claim
- Recordkeeping/Disclosure
- Supplier Notification
- Petition Submission (not a requirement)

Compliance Determination. Facilities must first determine if they are required to submit a Form R or are eligible to submit a Form A Certification Statement. The determination is based on the SIC code(s) for the facility, the number of full-time employees or equivalents, and the quantities of listed toxic chemicals manufactured, processed, or otherwise used at the facility. For facilities contemplating using the Form A Certification Statement, for each non-PBT toxic chemical facilities also must determine the sum of amounts in total waste and determine that they did not manufacture, process, or otherwise use more than 1 million pounds of the listed toxic chemical. Assistance with compliance determination and Form R completion is available through the States and the EPA Headquarters and Regions.

Report or Form Completion (Compliance). Once a facility has determined that it must comply with the statute, it must submit either a Form R or, if eligible, a Form A Certification Statement for each reportable chemical. The basic procedures for reporting are detailed in the regulations at 40 CFR 372 and described in the Reporting Forms and Instructions (Attachment A).

Substantiation of a Trade Secrecy Claim. If a submitter claims that the identity of a chemical is a trade secret, the submitter must support that claim. As the intent of the statute is public disclosure, the burden is upon industry to prove that certain data must be withheld from the public. Information must be provided to EPA that indicates that the identity has not been already revealed, that a competitive advantage would be lost if the identity were revealed, and that reverse engineering could not be performed to reveal the true identity of the substance if trade secrecy was granted. Trade Secrecy Substantiation, including the burden and costs to industry, is

discussed in greater detail in the ICR for the Trade Secrecy Rule for EPCRA (EPA ICR #1428, OMB #2050-0078).

Recordkeeping/Disclosure. Respondents are required to maintain records up to three years. Respondents are not required to disclose any information directly to the public.

Supplier Notification. Suppliers of facilities in SIC codes 20-39 are required to develop and distribute a notice if the mixtures or trade name products they manufacture or process, and subsequently distribute, contain listed toxic chemicals. These notices are distributed to companies in SIC codes 20-39 or to companies that sell or otherwise distribute the product to facilities in SIC codes 20-39.

Petition Submission. EPA issued statements of petition policy and guidance in the Federal Register on February 4, 1987 (52 FR 3479) and on May 23, 1991 (56 FR 23703). Petitioners may submit, in writing, a request to either add or delete a chemical to or from the section 313 list. The petitioner may include in this request evidence that the chemical either meets or does not meet the criteria established for inclusion on the section 313 list. Submission of a petition thus may involve a literature search and compilation and presentation of the findings to the Agency. Petition submission is not an activity that is required of regulated entities, but the burden estimates for filing a petition are included in this ICR.

4 THE INFORMATION COLLECTED--AGENCY ACTIVITIES, COLLECTION METHODOLOGY, AND INFORMATION MANAGEMENT

4(a) Agency Activities

EPA engages in many activities to fulfill the requirements of EPCRA. These activities can be grouped in the following categories which cover what the Agency does to assist the regulated community with compliance, process the data, maintain the database, and make the data available.

- Assistance to Respondents
- Data Processing and Quality Control
- Making Data Available
- List Revisions and Petition Reviews
- Trade Secrecy Reviews

Assistance to Respondents. The Agency has operated a successful outreach program to assist businesses in obtaining and completing both the Form R and Form A Certification Statement. A reporting package that is updated annually is distributed directly to all TRI respondents. This package also is made available to potential respondents through EPA's TRI website, Regional office coordinators and the EPA publications distribution center. The package

contains reporting forms with detailed instructions along with a magnetic media software package that allows reporters to submit their data on computer diskettes. General guidance has been prepared for estimating releases, including fourteen industry-specific guidance documents.

EPA also has established a training program designed to familiarize Regional personnel with the reporting requirements and to train them in providing technical assistance to respondents. Using that training, the Regions have conducted and continue to conduct numerous workshops each year to explain the reporting requirements to the regulated community. EPA also has established a training program to teach EPCRA section 313 reporting requirements to private businesses and consultants that wish to provide counsel on section 313 compliance. As previously mentioned, EPA operates a toll-free hotline to answer general questions and direct potential respondents to proper EPA personnel. In addition, the Agency maintains a website with current program-specific information and guidance (www.epa.gov/tri).

EPA has also provided guidance for persons or organizations interested in petitioning the agency to add or delete chemicals from the TRI list. In addition to this guidance, EPA also convenes pre-petition meetings to assist petitioners if they request such assistance.

Data Processing and Quality Control. When TRI reports are submitted on paper, the information is keyed into a database on a PC-based local area network (LAN). Automated data quality checks begin at data entry, including various edit checks and the start of normalization of some of the data fields. At this point, emphasis is placed on identifying forms that are not completed correctly. If the problem(s) identified prevent further processing of the form, EPA sends a Notice of Significant Error to the respondent. Notices of Technical Error are sent to the respondents identifying any errors and requesting corrections.

At this stage, EPA also loads data from those facilities that have provided their Form R submissions on magnetic media. Many data quality checks are incorporated into the magnetic media reporting package.

EPA continues to place a high emphasis on data entry accuracy within the TRI. EPA's internal review of approximately 4% of the records showed a data entry accuracy rate of over 99.9%. This is up from 97.5% for the 1987 reporting year. EPA continues to conduct the computerized edit checks at the point of data entry, including a high percentage of verification and data reconciliation activities. EPA now has available an electronic Facility Data Profile (FDP) that enables all reporting facilities to verify online all TRI data submitted. EPA continues to mail hard copy notices of significant reporting errors to reporting facilities.

Once on the LAN, the data are uploaded to the mainframe, where further data quality checks are made. These operations involve continued normalization of name fields, such as

county names, insertion of missing latitude and longitude coordinates along with checks with other data.

Congress requires EPA to make TRI data available to the public through computer telecommunications. As a result, EPA has found it necessary to undertake a variety of activities to make the data more usable. This is due to the fact that computer searches only retrieve data in exactly the format requested. Because facilities report their data in a wide variety of ways, EPA has taken steps to use a consistent name for all counties, used a variety of nomenclature standards for names within the database, added latitude and longitude representing the center of the zip code area in which the facility is found, and has taken other steps to assist in the normalization of the data.

EPA generates a facility identification number for newly reporting facilities at the time of data entry. This allows linkage to all years of reports for a particular facility or location. The identification number also allows easy retrieval of cross-year data, even when a facility is sold or changes its name. This number has been sent to all facilities and they are required to use it on all future submissions submitted to the Agency. Use of the facility identification number also facilitates data quality and cross-year analysis.

Under EPCRA section 313, facilities are required to submit forms both to EPA and the state in which they operate. For additional quality assurance and tracking purposes, EPA provides all states with a listing of facilities that reported to the Federal Reporting Center for each reporting year. This activity typically results in the identification of several cases where facilities had not reported to one or the other government. Many states then provide copies of forms to the EPA where EPA had not received copies, and vice-versa. This activity has provided a critical step to assist EPA in coordinating the data collection with the states and completing both data repositories.

The survey of the 1988 data focused on facilities in Standard Industrial Classification (SIC) codes 28 (chemical manufacturing), 29 (petroleum refining), and 34 (metal finishing and fabrication). Ninety facilities were visited. The aggregate 1988 release estimates in these industries were more accurate than their 1987 estimates, since their aggregate 1988 estimates were found to be approximately equal to the estimates calculated by the EPA contractor.

For the 1987 and 1988 reporting years, in a different type of survey, EPA also identified approximately 1,800 forms with suspect release data and telephoned facilities to discuss how to improve and correct their estimates. The information from this survey was also used to improve the reporting instructions and technical guidance.

Ensuring the accuracy of the on-site release and off-site transfer estimates is an on-going effort, and includes comparison across reporting years as well as use of data and evaluations based on facility site visits. EPA conducted a data quality site survey of 104 facilities for

reporting years 1994 and 1995: 25 facilities in SIC code 25 (furniture manufacturing) for 1994; 19 facilities in SIC code 281 (inorganic chemical manufacturing) for 1994; 17 facilities in SIC code 285 (paint manufacturing) for 1994; 23 facilities in SIC code 30 (rubber and plastics manufacturing) for 1994; 10 facilities in SIC code 26 (pulp and paper manufacturing) for 1995; and 10 facilities in SIC code 286 (organic chemical manufacturing) for 1995. Following are some of the major findings of the site survey: 1) Facility and site surveyor release estimates were in good agreement, calculated to be within ±3%. 2) Facilities primarily used purchasing records to make threshold determinations. 3) Facilities in chemical manufacturing used production data more frequently to make threshold determinations. 4) Facilities in chemical manufacturing were more likely to assume thresholds were exceeded and because of that they had the highest error rate, primarily for reporting chemicals that did not exceed thresholds. 5) Container residue was the most commonly overlooked release source.

Making TRI Data Available. Many options are available for accessing TRI data. EPA offers the data in a variety of common computer and hard copy formats to ensure that everyone can easily use the information. TRI is available on diskette, CD-ROM, and on the Internet. While TRI data have been available from several computer-based sources, recent system conversions, processing efficiencies, improvements in web-based access have created a need for a primary source for accessing TRI (and other Agency) data. Therefore, EPA has shifted its focus to the Envirofacts and TRI Explorer systems to address this need. TRI data will be updated in the Envirofacts and TRI Explorer systems at a more frequent rate than previously possible allowing the user community access to virtually "live" TRI data.

TRI reports are also available from state government offices as well as from EPA. For each reporting year, many states make their data available before EPA releases data from the national database. Persons interested in receiving state specific information may call their state EPCRA Coordinator or EPA Regional TRI Coordinator for assistance.

List Revisions and Petition Reviews. The list of toxic chemicals subject to reporting under section 313 of EPCRA is not static. The list can be modified by Agency-initiated reviews of chemicals or by public petition. If a listing petition is submitted by a State governor, then EPA must respond within 180 days by either publishing an explanation of denial or granting the petition. If EPA does not respond within 180 days the chemicals are automatically added to the toxic chemical list. Once a petition is received, EPA begins an intensive review that includes chemistry and toxicity analyses of the chemical or chemicals. Depending on the toxicity of the chemical or chemicals, EPA's review also may include exposure, economic, and engineering analyses. If the chemical meets the criteria for addition to the list, it is added or maintained on the list. If the criteria are not met, then the chemical is removed from the list. The criteria for inclusion on the list are stated in section 313(d)(2): the chemical is known to or can reasonably be anticipated to cause significant adverse acute human health effects at concentration levels that are reasonably likely to exist beyond facility site boundaries as a result of continuous, or frequently recurring, releases; the chemical is known to cause or can reasonably be anticipated to cause in

humans cancer or teratogenic effects, or serious or irreversible reproductive dysfunctions, neurological disorders, heritable genetic mutations or other chronic health effects; or the chemical is known to cause or can reasonably be anticipated to cause a significant adverse effect on the environment because of its toxicity, its toxicity and persistence in the environment, or its toxicity and tendency to bioaccumulate in the environment.

Since the list was first published, there have been 332 additions (including 6 chemical categories) to and 19 deletions or modifications (including modifications to two chemical categories) from it, and several delisting petitions are pending. Two hundred ninety-one of these additions (including 4 chemical categories) are the result of Agency-initiated rulemakings. Four of the deletions or modification, including acetone, sodium hydroxide (solution), sodium sulfate (solution), hydrochloric acid (non-aerosol), and sulfuric acid (non-aerosol), were high production volume chemicals, which greatly reduced the reporting burden on industry. In general, previous petitions have been submitted for single chemicals, however, a recent increase in petitions for groups of chemicals has occurred. EPA may list the chemicals as a category or add only those individual chemicals which meet the section 313(d)(2) criteria. Since inception of the TRI Program, EPA has identified several existing listed chemicals as PBT chemicals as well as added new chemicals as PBT chemicals.

Trade Secrecy Reviews. When a respondent claims a chemical identity as a trade secret, a substantiation must be included. Occasionally respondents claim trade secret status on Form R, but do not provide substantiation. In those cases, EPA must review the claim and contact the respondent to determine the true intent. In many cases, the trade secret claim was not intended and no substantiation is made. Trade Secrecy reviews, including the costs to EPA, are discussed in greater detail in the ICR for the Trade Secrecy Rule for EPCRA (EPA #1428, OMB #2050-0078).

4(b) Collection Methodology and Management

EPA continues to encourage the use of submissions on magnetic media. The use of magnetic media is intended to reduce both the cost and the time required to enter, process, and make available the data, although is may also reduce the reporting burden on industry. Submission by magnetic media also improves data quality because of automatic checks that highlight errors or omitted data. As an additional step in improving user's ability to report using magnetic media, EPA has made the Form A Certification Statement available on magnetic disk and CD-ROM. For TRI reporting, EPA has made available an automated reporting software package called TRI-ME, that simplifies the reporting process by automating calculations and compiling instructions and guidance in an electronic format.

4(c) Small Entity Flexibility

The statute provides that facilities with less than 10 full-time employees (or equivalent) are not required to report. In addition, EPA has taken several steps to minimize the burden for small businesses. A range reporting option was added to the February 16, 1988 final rule (53 FR 4500) that codified the EPCRA section 313 reporting requirements. Range reporting was the preferred option from the Regulatory Flexibility Act analysis to provide burden reduction for small businesses. Range reporting provides an option for releases of less than 1,000 pounds to be recorded as a code representing one of three ranges, 1 to 10 pounds, 11 to 499 pounds, or 500 to 999 pounds, rather than as a specific estimate of the release amount. The benefit is not, however, limited to small businesses. Range reporting is not applicable for PBT chemicals.

In addition, in response to a petition from the Small Business Administration, EPA has promulgated the alternate threshold (November 30, 1994, 59 FR 61488) discussed above. Although any reporting facility meeting the criteria may use the alternate threshold, it is thought that this alternate threshold will be most advantageous to small entities.

EPA has also developed interactive, intelligent, user-friendly software called "Toxics Release Inventory Made Easy Software (*TRI-ME*)," that asks the user simple, straightforward questions to help the user determine if the facility is subject to TRI reporting. *TRI-ME* has greatly reduced data quality errors and therefore, reduced the likelihood of a facility being in violation of the reporting requirements, or having to subsequently submit corrections. Over the three years of the ICR period, EPA expects adoption rates of TRI-ME to increase rapidly. Note that 73 percent of responses were received electronically for the 1999 reporting year. For the 2000 reporting year, 79 percent of responses were received electronically. EPA expects to attain similar adoption rates for TRI-ME by the end of the ICR renewal period. Based on responses from facilities that tested TRI-ME in Reporting Year 2000, EPA expects that TRI-ME will result in a burden reduction of 25 percent in the activities of Form R Completion and Recordkeeping/Submission.

4(d) Collection Schedule

Facilities must report their information on a calendar year bases, and submit the Form R to EPA by July 1 each year. On average, EPA has released the national TRI data set to the public approximately ten months after the annual reporting deadline, i.e., July 1. In response to public concerns about shortening the time frame for release of TRI information, EPA is instituting tighter deadlines for facilities to submit revised reports, and combining a series of automated data quality operations. The Agency expects these measures will help it to meet the ultimate goal of releasing data in the year of submission. Also, it is important to note that EPA's national database is just one avenue of access to the TRI information. Each state also makes its data available to the public, and most states are able to make their data available prior to EPA's release of the national database. For example, nearly half of the states release their state's TRI database within four months of the reporting deadline.

5 NONDUPLICATION, CONSULTATIONS, AND OTHER COLLECTION CRITERIA

5(a) Nonduplication

The basic information requested on the Form R is required to be reported by law. Other statutes, however, also require the reporting of information about releases of chemicals to the environment, creating the possibility of overlap or duplication of reporting requirements. EPA anticipates some overlap and provides that respondents may use readily available data collected pursuant to other provisions of law to complete the section 313 reports. However, currently available non-TRI sources of information cannot provide readily accessible release and transfer, inventory, or pollution prevention data with the scope, level of detail, and chemical coverage as data currently included in TRI.

The TRI contains information on releases, transfers, inventories, and pollution prevention activities for approximately 650 toxic chemicals and chemical categories. Although there are no national databases that are comparable to the whole of TRI, several data sources exist which contain media-specific data on releases and transfers. In theory, information from these databases could be combined to form an analog of release and transfer data contained in TRI. However, this undertaking is extremely difficult at best, and may be impossible given the currently available data sources (see Figure 1 below). Difficulties replicating TRI data using these alternative sources include differences in chemical coverage, facility coverage, reporting frequencies, and perhaps most importantly, the integration of data from various sources at a facility level.

For example, the AIRS Facility Subsystem (AFS) contains emissions, compliance, and enforcement data on air pollution point sources emitting any of the so-called criteria pollutants at levels above defined thresholds. AFS data are not a good substitute for TRI air emissions data because of the lack of reporting requirements for most air toxics and the lack of rigid reporting schedules, and because there is no requirement for states to report emissions of Hazardous Air Pollutants (HAPs) to AFS. A number of states and regional agencies do maintain their own air emissions inventories, including California, and the Great Lakes states. In these states, difficulties replicating TRI data include variations in the types of data collected, and the fact that only some states maintain these types of inventories.

FIGURE 1 - MAJOR RELEASE AND TRANSFER DATABASES

Data source	Media and chemical coverage[1]	Relevant releases statistics available	Ease of database substitution for TRI data[2]
Aerometric Information Retrieval System (AIRS), Facility Subsystem (AFS)	Contains annual emissions of six criteria air pollutants for facilities above reporting thresholds. Also contains limited information on toxics.	Total annual releases; average daily releases in non-attainment areas.	Limited toxics data due to submission being voluntary.
Permit Compliance System (PCS)	Contains monthly discharge monitoring data and flow rates for major sources of water pollutants.	Contains concentration data; total annual releases can be calculated; average daily releases, maximum "moment" if continuous monitoring.	Only includes chemicals for which a discharge limit has been set. Difficult to link between PCS parameters and CAS #; very limited monitoring data for minor dischargers.
Biennial Reporting System (BRS)	Contains waste volumes by RCRA waste code reported biennially.	Total annual off-site transfers of hazardous waste for land disposal; total annual releases to POTW.	Many RCRA waste codes are not specific to an individual CAS #. Quantities of chemicals in waste can not be determined. Portion of waste stream matching each waste code can not be determined.

Under RCRA, generators, treaters, storers, and disposers of hazardous waste are required to submit reports to the Biennial Reporting System (BRS) every two years. BRS tracks trends in hazardous waste generation and management, and contains information on the quantity and nature of hazardous waste treated and disposed. BRS cannot duplicate the information contained within TRI, as BRS waste codes do not necessarily map to unique chemicals, quantities of specific wastes in the wastestream cannot be determined, and reporting is less frequent than that of TRI.

The Permit Compliance System (PCS) tracks permit compliance and enforcement status of facilities that discharge to surface waters. PCS data are not a suitable substitute for TRI data due to the fact that PCS is a permit tracking system and not a loadings system. In other words, PCS typically tracks pollutant concentrations, and not total releases. This difference in purpose results

1. For additional detailed information on chemical coverage of TRI, AFS, BRS, and PCS, please refer to Attachments B-1 and B-2 at the end of this document.

2. "Ease of substitution" refers only to the potential of the information in the database to substitute for TRI reporting. It does not imply that the database is not adequate for the purposes for which it was designed.

in differences which are difficult to resolve in the amount and types of data collected. Furthermore, PCS does not contain all TRI chemicals.

TRI also contains inventory data, which makes up a small portion of the total data. The most likely alternatives for TRI inventory data are the Tier I/II data reported under EPCRA §312. Under EPCRA §312, regulated facilities must submit annual inventory reports of hazardous chemicals stored on site to the state. Tier I requires reporting on broad categories of physical hazards, while Tier II requires chemical specific information by CAS number. The information contained on the Tier I and Tier II reports surpasses the chemical inventory data requested on TRI Form R in terms of the chemicals covered and level of detail. However, there are significant difficulties with respect to public access of Tier I and Tier II data, including the lack of a national integrated database.

In addition to release/transfer and inventory data, TRI also collects pollution prevention data from reporting facilities. Pollution prevention data somewhat analogous to data in TRI can be found in BRS (described briefly above) and databases administered by two state environmental agencies. While BRS provides both qualitative and quantitative pollution prevention information, it does not have the facility or chemical coverage necessary to replace TRI pollution prevention reporting requirements. BRS contains data on generation, transfer, and management of hazardous wastes, while pollution prevention data contained in TRI includes information on wastes or process by-products in all production phases and media. In addition, states have come to rely on the pollution prevention data provided to them by TRI. As a result, no state program collects all of the pollution prevention data currently available in TRI.

What follows is a more detailed discussion of the several information sources that currently provide pollutant release and transfer data. The analysis is broken down by specific type of data collected under TRI.

Fugitive/Non-Point Air Emissions and Stack/Point Air Emissions

Fugitive (non-point) air emissions and stack (point) air emissions are reported under Sections 5.1 and 5.2, respectively, of TRI Reporting Form R. (Fugitive air emissions are defined as all releases of air pollutants to the air that are not released through stacks, vents, ducts, pipes, or any other confined air stream. Stack air emissions are defined as all releases of air pollutants that are released through stacks, vents, ducts, pipes, or any other confined air stream.) In the paragraphs below, several alternative data sources are compared and contrasted to TRI. Key criteria considered in comparing the alternative data sources with TRI include: chemical coverage, industry/facility coverage, release statistics, and public accessibility to the data.

<u>AIRS Facility Subsystem (AFS)</u>

The Aerometric Information Retrieval System (AIRS) is a computer-based repository of information on airborne pollution in the United States and various World Health Organization (WHO) member countries. AIRS is comprised of four major databases - Air Quality (AQ), AIRS Facility Subsystem (AFS), Area/Mobile Source (AMS), Geo-Common (GCS) subsystems, and a mapping utility for all AIRS data called AIRS Graphics (AG). Each subsystem addresses different, but connected, aspects of the Clean Air Act regulatory requirements. AIRS is administered by EPA's Office of Air and Radiation (OAR).

The AIRS Facility Subsystem (AFS) is the database component of AIRS which tracks air emissions from industrial plants. AFS contains emissions, compliance, and enforcement data on air pollution point sources regulated by EPA, state and local environmental regulatory agencies.

OAR manages EPA programs to improve air quality in areas where the current quality is unacceptable and to prevent deterioration in areas where the air is relatively free of contamination. To help accomplish this task, OAR uses AFS to track emissions of pollutants that have been proven to be detrimental to public health, known as *criteria pollutants*, as defined in the national ambient air quality standards. The six criteria pollutants which states must report to AFS include: particulate matter less than 10 microns in size (PM10), carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), lead (Pb), and ozone (reported as reactive volatile organic compounds, an ozone precursor). States are required to report ambient air quality data on a quarterly basis, and point source data on a yearly basis, for the criteria pollutants listed. In addition, states may choose to use the AIRS system to store data on a wide variety of other pollutants and related variables.

Data in AFS is organized into four logical levels: plant, stack, point, and segment. The plant is a facility represented by its physical location, and defined by property boundaries. A stack or vent is where emissions are introduced into the atmosphere. An emission point is a physical piece of equipment or a process that produced emissions. Finally, a segment is a component of a point process (such as fuel combustion) that is used in the computation of emissions. (U.S. EPA, 1995a)

At the facility level, sources with air emissions greater than 1,000 tons per year (tpy) for CO, 100 tpy for VOC, PM-10, SO_x, or $NO_{x,}$ or 5 tpy for lead must report actual or estimated annual emissions data. At the point level, such as a stack or any single piece of equipment or process where emissions occur, sources with air emissions greater than 25 tpy for VOC, PM-10, SO_x, or NO_x, 250 tpy for CO, and 5 tpy for lead must report actual or estimated annual emissions data. AFS data are utilized by states to prepare State Implementation Plans to comply with regulatory programs and by EPA as an input for the estimation of total national emissions. Data for over 100,000 point source facilities are stored in AFS.

Compliance and enforcement data are updated by states and EPA based on the data submitted by facilities. Compliance data for these plants may be recorded for the plant as a whole

or for a specific point within the plant. Emissions estimates are available for facilities satisfying the emissions thresholds described above. States also are required to report emissions data for point sources which emit below the 100 ton threshold in areas where air quality does not meet federal standards (non-attainment areas).

Fugitive air emissions data are not specifically flagged within AFS. It may be possible, however, to generate fugitive emissions estimates for pollutants included within AFS by determining all Source Classification Codes (SCCs) generating fugitive air emissions, and then totaling emissions (Kleeman, 1995). SCCs are eight-character codes which represent specific processes or functions within a source category. For example, SCC 1-02-005-01 corresponds to the burning of distillate oil in an industrial boiler. SCCs allow proper identification of processes as well as proper calculation of emissions when applying AP-42 emission factors.[3] Because SCC codes are not designed to distinguish stack level emissions from fugitive air emissions, such an effort would require a review of all coded industrial processes in order to identify those generating fugitive emissions.

As described in more detail in following sections, AFS data are not good substitutes for TRI stack or fugitive emissions data. Problems include the lack of reporting requirements for most air toxics, and the lack of rigid reporting schedules.

Chemical coverage: States are required to report to EPA annual emissions estimates for point sources emitting greater than or equal to threshold quantities of the *criteria pollutants* (40 CFR §51: 321-326): particulate matter (PM_{10} & $PM_{2.5}$), carbon monoxide, sulfur oxides, nitrogen
+ oxides, lead, and ozone. Currently, there is no requirement for states to report hazardous air
+ pollutants (HAPs) to AFS, although some states with toxics reporting requirements that exceed
+ federal requirements may upload their air toxics information to AFS.[4] At this time, however, no
+ research has been undertaken to determine which states report which HAPs. There also are no
+ statistics on the frequency of state HAP reporting, which facilities report, or the reporting
+ thresholds.

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3. AP-42 Emission Factors, available from the Factor Information Retrieval (FIRE) System, and emission factors in general, are representative values that attempt to relate the quantity of a pollutant released with a given activity associated with the release of that pollutant. Emission factors are typically expressed as the weight of pollutant divided by a unit weight, volume, distance, or duration of the activity emitting the pollutant (EPA, 1995b). Generally, AP-42 emission factors are simply averages of available emissions rates that can be used to facilitate the estimation of air emissions and are sometimes used by facilities to estimate TRI releases and transfers. A difficulty with using emissions factors is that there is a lack of facility-specific throughput data (production or activity), without which estimates cannot be made. Another difficulty is that the factors are averages and do not account for the variations between facilities.

4. Hazardous Air Pollutants (HAPs) are defined in Section 112 of the Clean Air Act (CAA). Section 112 lists 189 HAPs, of which 181 also are listed in TRI.

Because data on toxic releases in AFS are sparse, emissions can be estimated (that is, modeled) using a technique called "speciation." Speciation involves multiplying reported emissions of particulate matter (PM) and VOCs by fractions representing various compounds, according to a profile specific to the emission source. SPECIATE is EPA's repository of total organic compounds (TOC) and particulate matter (PM) speciated profiles for a variety of sources for use in source apportionment studies. OAQPS's Clearinghouse for Inventories on Emission Factors (CHIEF) website makes available SPECIATE, a windows-based speciation application with apportionment factors for 691 organic chemicals and 110 particulates in about 700 total profiles. However, there are significant limitations to the accuracy and reliability of speciation data. The speciation profiles contained in SPECIATE were developed from field sampling, engineering judgements, and other indirect techniques. The weight percentages and number of chemicals in a given profile may be heavily influenced by the particular analytical and sampling methods used to develop the profile. (U.S. EPA, 1996)

Another shortcoming of SPECIATE involves the assignment of profiles for all SCCs in AIRS. Ideally, each SCC in AIRS would have a unique profile to represent its speciation characteristics; however, there are far more SCCs than available profiles. Therefore, those categories which are not associated with original profiles are assigned profiles based on engineering judgement (Radian, 1993).

Industry/facility coverage: Because facilities are included in AFS on the basis of their emissions levels, there are no SIC or industry limitations imposed on the list of AFS-covered facilities. In contrast, TRI currently only requests data from some, but not all SIC codes, thereby excluding many other industries. It is important to note, however, that emissions thresholds play an important role in determining which facilities are covered. Facilities are covered under AFS only if they release multiple tons of criteria pollutants annually. Smaller HAP emitters that release small amounts of criteria pollutants may therefore be completely exempted from reporting to AFS. TRI, on the other hand, employs thresholds of 10,000 and 25,000 pounds per year, depending on how a particular chemical is used, processed, or manufactured. In addition to this use threshold, TRI also exempts facilities with less than the equivalent of ten full time employees.

Release statistics/reporting frequency: EPA requests that states upload information to AFS on an annual basis. However, because there are no defined reporting schedules and no real penalties for not reporting, in practice there is "rolling receipt" of information, with some states failing to report for various reasons in some years. Although AFS notes that most states report regularly, and some facility-specific emissions data are available from AFS across all reporting years (Wakefield, 1995), the looseness of the reporting structure makes comparisons across states, industry, facilities, or years difficult.

Accessibility: AFS data are accessible through the EPA Mainframe and to a limited degree, through AIRS Executive, a self-contained updatable and downloadable program which digests and summarizes AIRS data. There are no access restrictions for AIRS Executive which is

available through the EPA World Wide Web site (http://www.epa.gov/airs/aexec.html). The EPA Mainframe, however, is password protected and is not accessible by the general public.

State Air Emissions Inventories

Several states and regional agencies maintain their own air emissions inventories, including the inventory set up under California's "Hot Spots" Information and Assessment Act (Assembly Bill 2588), and the Great Lakes Regional Air Toxics Emissions Inventory. Approximately half the states have implemented some kind of air toxics reporting system (Pope, 1995). However, the amount of data as well as the types of data elements collected varies widely from state to state. The Great Lakes inventory merits special attention because other states and countries (including Louisiana; Texas; Ontario, Canada; and Mexico) use it as a model for their own inventories. A number of other states have active programs or are in the process of developing them. A number of other states have active programs or are in the process of developing them. Two are discussed below in terms of their coverage and accessibility characteristics.

Chemical coverage: Chemicals covered under state and regional inventories vary widely in the number of chemicals covered, data elements required, and reporting thresholds used. While some inventories collect detailed, facility level information on many chemicals, others are designed only to track very specific pollutants for specific applications.

Industry/facility coverage: States often develop their own toxics inventories due to perceived gaps in TRI's industry coverage. For example:

A. The Great Lakes Regional Air Toxics Emissions Inventory will not require emissions reporting by industry. Rather, state agencies will use best available emission factors (FIRE) or source-specific emission factors and throughput information to estimate emissions from a much larger catalog of sources than TRI, including area sources such as dry cleaners, asphalt plants, and wood stoves (Ratza, 1995).

Release statistics/reporting frequency: The type of data collected and data collection frequency among states and regions also varies widely. For example:

Accessibility: Because each state or region which maintains a HAPs database does so more or less independently of the federal government, there currently is no central repository of this information. Because the states and regions also use different database formats and applications to maintain their data, building a multi-state/region air emissions inventory from the existing databases would be a challenging task. However, OAQPS is in the process of developing a national toxics inventory database, which will utilize a combination of TRI data and state, regional, & local databases (Pope, 1995).

Another potential partial solution to the data compatibility problem, once it is fully implemented, is the Great Lakes Regional Air Toxics Emissions Inventory, which is maintained using the Regional Air Pollutant Inventory Development System (RAPIDS).

As the principle component of the Great Lakes Regional Air Toxic Emissions Inventory project, the Regional Air Pollutant Inventory Development System (RAPIDS) is the first ever multi-jurisdictional pollutant emissions inventory software that has been developed. This software is an important product of the binational steering committee effort to design and implement a regional inventory containing sources of toxic air contaminants. RAPIDS was originally tested by Illinois, Indiana, and Wisconsin in their joint development of the Southwest Lake Michigan Pilot Study. The focus of the study was on the Commission defined list of 49 toxic pollutants, in addition to several other important nontoxic compounds. Now, RAPIDS is used by each Great Lakes state and Province of Ontario. The latest regional inventory for 1997 contains over 80 toxic pollutants for point, area, and mobile (onroad and nonroad source) emissions. For the 1999 effort, all 188 Hazardous Air Pollutants (HAP) as identified by the U.S. Environmental Protection Agency were inventoried.

The latest release of RAPIDS (Version 2.1) has been updated to include, among other things, the ablity to export emissions data in a format compatible with the U.S. EPA's National Emissions Inventory (NEI). For the 1999 national inventory, all states were required to submit emissions data in this format, which makes RAPIDS one of the most progressive emissions inventory systems available. According to the Great Lakes Commission, RAPIDS is the “first-ever multi-state pollutant emissions estimation software,” and handles sophisticated relational data management as well as emissions estimations.

Title V Part 70 Operating Permits

Under the 1990 Clean Air Act Amendments (CAAA), facilities designated as “major sources” and facilities otherwise subject to Section 112 and Title IV must apply for a Title V Part 70 Operating Permit. Although a facility can meet the criteria for a major source in any of several ways, particularly relevant are those facilities which attain major source status by emitting 10 tons per year (tpy) or more of any HAP or 25 tpy total combined HAPs. As part of the application for a Title V permit, some facilities may have to report emissions of air toxics (see discussion on chemical coverage below). There is significant overlap between the 189 HAPs regulated under the CAA and the 600+ chemicals in TRI. Compared to TRI, however, the information provided in the permit applications has very different characteristics in terms of chemical coverage, completeness, and accessibility.

Chemical coverage: Title V requires that all permit applicants provide qualitative descriptions of their emissions, including all criteria pollutants and all 189 toxic pollutants. Quantitative emissions estimates are usually required by the permitting authorities only when more information is needed to resolve a dispute over applicable requirements, such as whether or not the facility

should be classified as a major source. In the event that there is no dispute, no emissions estimates are required. In situations where estimates are required, facilities are allowed to use "available information," which includes EPA emission factors documents, "reasonable engineering projections," as well as test data. EPA's policy, as outlined in the "White Paper for Streamlined Development of Part 70 Permit Applications," is to request just enough information to convince the permitting authorities that the facility meets all emissions requirements. According to the White Paper, "emissions information for these purposes does not always need to be detailed or precise." (U.S. EPA, 1995c) For most pollutants, it is not likely that Title V Part 70 emissions data could substitute for TRI release reporting.

Industry/facility coverage: There are no SIC or industry limitations for major facilities. For non-major sources, decisions on permit applicability are made on a source category by source category basis. Decisions are currently being made on Title V Part 70 permit requirements for non-major sources as to which source categories will be exempted, deferred, or required to obtain permits (Seitz, 1995). However, as stated above in the chemical coverage discussion, actual emissions estimates are required only when attempting to settle a dispute over facility status or other applicable requirements. Therefore, the majority of Title V permit applicants are not required to furnish any quantitative data. Title V's facility coverage is likely to be different from TRI's facility coverage, due to the differences in applicability criteria between the two systems. While TRI has a manufacture, process, or use threshold for toxic chemicals, Title V has applicability criteria based on HAPs emissions (see above).

Release statistics/reporting frequency: Emissions information is required at the time of permit application, renewal, and modification. Since permits are typically renewed every five years, most facilities will report their information every five years (Swanson, 1995). Other possible situations for emissions information updates include new applicable requirements not requiring permit modifications, and changed compliance status of facilities. Even if the information was as complete as TRI, the duration between reports is much longer than the one year timespan between TRI reports.

Accessibility: The U.S. EPA does not maintain a central inventory of the emissions data contained in the permit applications (Southerland, 1995). This information is kept at the state and regional levels, making it difficult to access, especially in comparison to TRI.

Summary of Availability of Fugitive/Non-Point and Stack/Point Air Emissions Data

None of the data sources described above can be used in place of TRI fugitive or stack emissions data. Although AFS provides good data on criteria pollutants, only one criteria pollutant (lead) is reportable as a discrete chemical substance on both AFS and TRI. Further, AFS HAP release information is not a good substitute for TRI because data for EPCRA Section 313 toxic chemicals are generally unavailable, and speciation cannot reliably generate accurate facility-specific HAP emissions estimates. In addition, fugitive emissions are not specifically

flagged within AFS. Some state air emissions inventories such as California's may collect air emissions information that is as complete or even more detailed than TRI. However, not all states maintain inventories, and there are still many unresolved data compatibility and accessibility issues. The Great Lakes inventory is limited in its geographic coverage as well as the number of chemicals it contains, uses different data collection techniques than TRI, and relies on state-generated estimates in lieu of facility reported release data. Emissions information on air toxics contained within Title V Permit documents also are not a substitute for TRI emissions in terms of chemical coverage, frequency of reporting, or accessibility.

Direct Discharges to Receiving Streams or Water Bodies

Form R requires that facilities report total direct discharges to receiving streams or water bodies. Releases are reported in pounds per year and include the name of the receiving stream or water body. The following section compares and contrasts the Permit Compliance System (PCS) with TRI to determine whether it could be used as a substitute for TRI chemical release data. In comparing and contrasting PCS with TRI, several variables are considered. Key criteria include: chemical coverage, industry and facility coverage, release statistics, reporting frequency, and accessibility.

The Permit Compliance System (PCS) tracks permit compliance and enforcement status of facilities regulated by the National Pollutant Discharge Elimination System (NPDES) under the Clean Water Act (CWA) and is managed by EPA's Office of Enforcement and Compliance Assurance (OECA). PCS tracks all point source discharges to surface waters, but does not include indirect releases such as discharges to Publicly Owned Treatment Works (POTWs). Permits are classified as major or minor based on facility discharge characteristics such as toxic pollutant potential and flow volume. Facilities are classified as "major" based upon a scoring system which considers toxic pollutant potential, flow/streamflow volume, conventional pollutant loading, public health impacts, water quality factors, and proximity to near coastal waters.

Major dischargers report compliance with their NPDES permit limits through Discharge Monitoring Reports (DMRs). DMRs are generally submitted on a monthly basis to state and regional EPA, providing detailed information on reported measurement values for those chemicals regulated within their NPDES permit. Data collected via DMRs are entered into PCS, including: concentration and quantity values for regulated pollutants, and the type of permit violation (if any). EPA uses PCS to produce the Quarterly Non-Compliance Report (QNCR), a public document listing NPDES permit violations. EPA requires monitoring data only for those permits classified as major. For minor facilities the database contains only general facility-level information. It is important to note, however, that All NPDES permittees (both major and minor) are required to file DMRs with their State or Regional NPDES authorities. Therefore, monitoring data for minor facilities are available from the files of these permitting authorities, which are open to the public. Data for minor facilities are not maintained through the national database.

There are several differences between TRI and PCS stemming primarily from the divergent purposes of the two systems. Unlike TRI, PCS is a permit tracking system rather than a toxic pollutant loadings system. The differing data needs of these two types of systems make it problematic to transfer information from one to the other. For example, although EPA requires the reporting of PCS data in mass units unless it is impracticable to do so, the fact that PCS monitoring data can be reported in either mass units or as concentrations can make comparing the releases of two facilities a complicated issue. Data in units of concentration data can be converted to mass units only if flow data also exist.

Chemical coverage: A facility's permit record may not include all pollutants actually being discharged by the facility. The monitoring data available through PCS for major dischargers include only those chemicals for which a monitoring requirement has been set in the permit. Federal effluent guidelines exist for many major industries and determine chemicals for which monitoring is required. However, the guidelines may not consider the same chemicals across industries. Therefore, two facilities in different industries with similar chemical releases may not necessarily both report the same set of chemicals to PCS. Also, for facilities not covered by a Federal effluent guideline, it is left to the discretion of the permit writers to decide which pollutants will be included in the permit, how often monitoring must occur, and which parameters and units of measure are to be used.

Because NPDES permit discharge limits are written in terms of PCS pollutant parameters, and not CAS numbers, much of the data contained within PCS is not chemical-specific. An example of a non chemical-specific PCS parameter is parameter 00535, Suspended Volatile Solids. It may be difficult to determine the mix of specific chemicals when data are reported using non chemical-specific parameters. In addition, in many cases, multiple parameters are reported for the same chemical, representing different measures of the same chemical. For example, PCS parameter numbers 01049, 01050, and 01051 represent dissolved, suspended, and total lead, respectively. Because there may be several parameters for a single chemical, it becomes difficult to aggregate their masses. Chemical Abstract Service (CAS) registry numbers are not reported for chemical parameters; however, parameters can sometimes be linked to a specific CAS number using an EPA database called SUPERCAS. SUPERCAS is an edited and augmented version of the CAS matching file contained in STORET, an EPA water monitoring data system. All PCS parameters are contained within SUPERCAS, and although SUPERCAS is not updated regularly, the addition of new parameters to PCS is a relatively infrequent event.

Industry/facility coverage: EPA requires monitoring data only from those facilities classified as major dischargers. For minor facilities, the database contains only general facility-level information. While the database tracks about 65,000 active permits, only about ten percent of these are classified as major. A state may choose to submit monitoring data for minor facilities but generally such data are unavailable. Unlike TRI, PCS does not restrict reporting requirements to specific industry groups or exempt facilities with less than the equivalent of ten employees.

Release statistics: The release statistics reported for PCS parameters depend on the permit specifications. Often, releases are reported as concentrations in parts per million (ppm) or milligrams per liter (mg/L), as opposed to units of mass such as pounds per year (lb/yr) or kilograms per year (kg/yr) (Rubin, 1995). If discharges are reported in mass units, a maximum daily discharge also is reported. The basis for these reported data varies among facilities. For example, a facility may sample its effluent only once per month and still report a monthly maximum discharge. If discharges are reported as concentrations, a minimum, maximum, and average value may be reported, although a significant percentage of dischargers report only a maximum concentration (Rubin, 1995). In general, flow rates are available for converting concentration units to units of mass (i.e., kg/year can be calculated by multiplying mg/L by the annual flow rate), although in some cases the flow rates are not provided.

A complex algorithm is required to estimate annual loadings from PCS data. The algorithm must first identify facilities reporting quantities in pounds or kilograms, favoring mean values over maximum or minimum values. For facilities with no loadings data, monthly concentration data must be linked and multiplied by each month's corresponding flow data, again favoring mean values over maximum and minimum values. Additionally, the algorithm must convert the results to a single unit of measure. PCS facilities report at least 26 different units of measure and 15 units of flow (e.g., gallons, thousands of gallons, and millions of gallons in terms of minutes, hours, days, and years). This step is repeated for each month and summed to produce an annual loadings estimate. If twelve months of data are not available, an average value can be used to produce an annual estimate.

Facility releases may be overestimated for several reasons: 1) facilities that release chemicals below their detection limit (e.g., between 0-6 ppm) will sometimes report releases at the detection limit (e.g., 6 ppm) in order to indicate the likely presence of a chemical; 2) facilities with episodic releases may be required to report releases at their peak level and not an average annual quantity; and 3) Facilities might have multiple monitoring points along the same outfall route, resulting in double counting. Such reporting specifications may be appropriate given the purpose of the NPDES permit; however, PCS data will not always be appropriate for estimating annual pollutant loadings.

Reporting frequency: Discharge Monitoring Reports are generally submitted monthly to State or Regional EPA; therefore, reporting frequency is not a limitation when compared to TRI.

Accessibility: PCS data are accessible through the EPA Mainframe, the ENVIROFACTS database, as well as RTK NET. The EPA Mainframe is not accessible to the general public.

Conclusion of Availability of Data on Direct Discharges to Water

Because PCS is a permit tracking system, and not a pollutant loadings system, it cannot provide a suitable substitute for TRI release data. Within PCS, release data are only available for

major facilities, and are reported in terms of PCS parameters, not specific chemicals. These chemical parameters cannot always be easily converted into CAS numbers. In addition, only those chemical parameters actually specified in the facility permit have monitoring requirements. In some cases, data may be reported in units of concentration rather than units of mass. If flow rates also are reported, concentration data can be used to estimate total releases, although there are several complicating factors in producing such an estimate. As of this writing, the Office of Water and the Office of Enforcement and Compliance Assurance are undertaking a major effort to improve the process through which permits are written and coded into PCS so that loadings can be tracked more accurately and efficiently.

Underground Injection and Land Disposal On-Site

Section 313 requires reporting of on-site surface and subsurface (i.e., underground injection) releases to land. On-site surface releases to land include the following subcategories: landfill, land treatment/application farming, surface impoundment, and other disposal. The Biennial Reports (part of the RCRAInfo database) require reporting of both underground injection and other on-site releases to land. RCRAInfo replaces two earlier systems - the Biennial Reporting System(BRS) and the Resource Conservation and Recovery Information System (RCRIS). The following analysis compares and contrasts Biennial Reports with TRI to determine whether it can be used as a substitute for TRI underground injection and on-site releases to land data.

Under Section 3002(a)(6) of the Resource Conservation and Recovery Act, facilities that generate an amount of hazardous waste that exceeds a defined threshold are required to submit biennial reports on that waste to EPA (or to state agencies that run RCRA programs). These reports include information on the quantity and nature of hazardous waste, the disposition of all hazardous waste, efforts undertaken to reduce volume and toxicity of waste generated, and the changes in volume and toxicity of waste actually achieved during the year. Facilities which treat, store, or dispose of hazardous wastes must provide information on the methods of treatment, storage or disposal. Data are reported to the states and regions, which then provide it to EPA headquarters. Information is entered into RCRAInfo, which is maintained by the Office of Solid Waste and Emergency Response (OSWER).

Biennial Reports provide an overview of the progress of the RCRA program through tracking trends in hazardous waste generation and management. Large quantity generators (LQGs) and treatment, storage, and disposal facilities (TSDFs) are required to report every two years. Large quantity generators are defined as facilities that generate 2,200 pounds of total RCRA hazardous waste per month; generate 2.2 pounds of RCRA acute hazardous waste a month, or accumulate this amount during the year; or generate or accumulate more than 220 pounds annually of spill cleanup material contaminated with RCRA acute hazardous waste. Biennial Reports contain data for about 23,000 LQGs and 4,000 TSDFs.

There are several important differences between Biennial Reports and TRI. Although Biennial Reports maintain a large amount of useful data, it nevertheless cannot duplicate the information contained within TRI. Waste codes used in Biennial Reports do not necessarily map to unique chemicals, quantities of specific chemicals in a wastestream cannot be determined, and reporting is less frequent than for TRI. As detailed below, for these reasons Biennial Reports are not a reasonable substitute for TRI.

Chemical coverage: Biennial Reports contain data on hazardous wastes as defined by RCRA. RCRA hazardous waste is designated as either "listed waste" or "characteristic waste". Listed wastes have been identified as hazardous as a result of EPA investigations of particular industries or because EPA has specifically recognized a commercial chemical waste's toxicity. Listed wastes appear in 40 CFR Part 261. Characteristic wastes are determined hazardous because they exhibit one or more of the following "characteristics": ignitability, corrosivity, reactivity, or toxicity.

The primary difficulty with waste codes is that not all waste codes used in Biennial Reports reporting map directly to a single, unique chemical. For example, waste code F004 is defined as:

> *The following spent non-halogenated solvents: cresols, cresylic acid, and nitrobenzene; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.*

Listed wastes that are categorized as non-specific source waste (the F wastes, such as F004 defined above), specific source wastes (the K wastes), and three of the characteristic waste categories (D001, D002, and D003) cannot be matched to a specific chemical. Listed wastes categorized as commercial chemical products (the P and U wastes), and characteristic wastes meeting the toxicity characteristic (D004-D043) each may represent a single, unique chemical, but they also may represent a mixture of various materials of which the identified chemical is but a small proportion.

FIGURE 2 - Hazardous Waste Generation Reported to 1999 National Biennial Reports

Type	Description	Tons (millions)	% of Total
Characteristic Waste	D001, D002 or D003, only	2.0	4.9%
	D004 - D043, only	6.8	16.9%
	Multiple characteristic wastes	12.1	30.2%
Listed Waste	F waste or K waste, only	5.9	14.7%
	P waste, only	0.08	0.2%
	U waste, only	0.49	1.2%
	Multiple listed wastes	0.85	2.1%
Both Characteristic and Listed waste		11.8	29.5%
Total		40.02	100%

Source: U.S. EPA, 1994.

Industry/facility coverage: Biennial Reports reporting requirements do not require that specific industries or SIC codes report; however, certain waste categories are excluded (40 CFR §§261.4 and 261.3(c)(2)(ii)). For example, the so-called the Bevill exemption (40 CFR §261.4(b)(7)) classifies solid wastes resulting from the extraction, beneficiation, and processing of ores and minerals (including coal, phosphate rock and overburden from the mining of uranium ore) as non-hazardous solid wastes and therefore not subject to Biennial Reports reporting.[5] Extraction and beneficiation wastes, plus 20 special mineral processing wastes (listed under 40 CFR §261.4(b)(7)), fall under RCRA Subtitle D classification. TRI does not currently require reporting from the mining industry, although mining is one of the industries being considered for addition to TRI. In addition, emission control wastes, which are prominent wastes within the electric utilities industry, are excluded from Biennial Reports reporting. Electric utilities represent an industrial group being considered for addition to TRI. The full list of wastes that are excluded from Biennial Reports reporting include the following:

Acid
Agriculture, Irrigation
Cement Kiln Dust
Chromium, Leather Tanning
Drilling Fluid
Emission Control Waste
Fertilizer
Household
Mining
Mining, In situ
Mining, Overburden
Nuclear
Petroleum-contaminated Media and Debris
Precipitation Runoff
Pulping Liquor
Sewage, Domestic
Sewage, Mixture
Wastewater, Point Source Discharge

5. As defined under §261.4(b)(7), the beneficiation of ores and minerals includes but is not limited to activities such as the following: crushing, grinding, washing, sizing, drying, solvent extraction, and magnetic separation. For a complete list refer to §261.4(b)(7).

Wood, Wood Products

Release statistics: While some of the waste codes used in Biennial Reports to identify waste streams may refer to a single, unique chemical (i.e., a specific CAS number), others do not. In addition, a waste stream can be identified by multiple waste codes (e.g., a waste stream can simultaneously be ignitable, contain spent halogenated solvents, contain benzene, etc.). At present, there is no mechanism to apportion the waste stream volume to particular waste codes where multiple codes are reported.

The "mixture rule" and "derived-from" rule were adopted by EPA in 1980 and affect the data reported to Biennial Reports.[6] The derived-from rule provides that wastes derived from a listed hazardous waste (such as the ash from incineration of a listed waste) also are deemed hazardous waste. The mixture rule provides generally that any mixture of listed hazardous and non-hazardous waste are considered hazardous waste (although there are important exceptions). RCRA waste streams are often a mixture of one or more toxic chemicals contained at various concentrations in a non-hazardous matrix (e.g., railroad gravel or water). From the reported data, it is not possible to determine the fraction of the entire waste stream that is composed of a particular hazardous chemical. While it is evident that the chemical concentration is adequate to result in the waste stream being defined as hazardous (e.g., the chemical concentration exceeds a certain threshold), no more detailed determination regarding the quantity of the hazardous component released can be drawn.

Reporting frequency: LQGs and TSDFs submit Biennial Reports data on a biennial basis. In contrast, TRI reporting occurs on an annual basis.

Accessibility: Biennial Reports are accessible through the EPA Mainframe, the ENVIROFACTS database, as well as RTK NET (See Attachment B-3). The EPA Mainframe is not accessible to the general public.

Conclusion on Availability of Data on On-Site Releases to Land

Biennial Reports require individual reporting of underground injections on-site as well as on-site releases to land, as does TRI. However, only half of the waste codes used in Biennial Reports can be assumed to identify individual chemicals. In addition, the waste classification system, including the "mixture rule" and "derived-from" rules, results in waste quantities being reported to Biennial Reports that do not identify quantities of the individual chemicals. The quantity reported to Biennial Reports represents the quantity of the entire waste stream, and not individual chemicals. Therefore, Biennial Reports is not a good substitute for TRI because it is

[6] The "mixture rule" and the "derived-from" rule were struck down by a 1991 D.C. Circuit Court ruling, but at the court's suggestion, EPA has temporarily reenacted the rules on an interim basis while it develops a new rule to consider them.

not possible to reliably estimate the releases of a particular toxic chemical to underground injection on-site or releases to land on-site from Biennial Reports.

Discharges to a POTW

Section 313 requires that facilities report information on annual discharges to POTWs (Public Owned Treatment Works), including the name and location of the POTW. Although Biennial Reports requires some reporting of discharges to POTWs, and PCS allows for reporting of indirect discharges to water, neither system provides information about POTW discharges at TRI's level of detail and completeness.

The RCRAInfo system, which contains data from the biennial reports of large quantity generators (LQGs) and treatment, storage and disposal facilities (TSDFs), also requires reporting of some discharges to POTWs. Several limitations associated with Biennial Reports data, however, are described above. In addition, hazardous waste, once mixed with domestic sewage and sent to a POTW for treatment, is no longer considered a hazardous waste and is therefore not reported to RCRAInfo.

Section 1004(27) of the Resource Conservation and Recovery Act (RCRA) provides that once hazardous waste is discharged directly or indirectly to surface waters, the waste is not subject to Biennial Reports reporting. Hazardous waste must be reported only if it receives on-site treatment or is stored in a RCRA permitted unit prior to discharge. If it receives treatment or is stored in an exempt unit (e.g., tanks or totally enclosed treatment units), the waste is reported only if the generator qualifies as a large quantity generator, although the exempt waste is not counted when determining whether a facility is a Large Quantity Generator. TRI provides no exemption for discharges to POTWs which receive no prior treatment.

Although the Permit Compliance System (PCS) includes indirect discharge data elements, PCS does not require reporting of indirect discharges (i.e., discharges that pass through a POTW before entering a waterbody, in contrast to waste discharged directly to a waterbody). States have the option of including indirect discharge data, although very few require that this data be reported (Rubin, 1995).

Transfers to Other Off-Site Locations

EPCRA Section 313 requires that facilities reporting to TRI report transfers to off-site locations, including the name, location, and RCRA ID number of the off-site location. The Biennial Reports, which contains hazardous waste data from large quantity generators (LQGs) and treatment, storage and disposal facilities (TSDFs), also requires reporting of off-site transfers on its Form GM. Information requested by RCRAInfo includes the EPA ID of the facility to which the waste was shipped, the processes used to treat, recycle, or dispose of the waste at the

off-site facility, the off-site availability code, and the total quantity of waste shipped during the report year (see discussion above of underground injection and land disposal for a more complete description of Biennial Reports). Biennial Reports also provides data on the volume of hazardous waste shipped off-site for land disposal, a release end-point of relevance to TRI.

There are several difficulties associated with comparing Biennial Reports data to TRI data, which are described above in the section covering on-site releases to land.

Review of State Right-to-Know Programs

Under the TRI program, data is submitted to both the U.S. Environmental Protection Agency and to the state or tribal entity in whose jurisdiction the reporting facility is located. With the advent of the federally mandated TRI reporting requirements and the influx of this new information, states with release and transfer reporting requirements of their own changed their programs to minimize program costs to industry and government. In New Jersey, for example, where TRI overlapped with state toxics reporting requirements under the New Jersey Right-To-Know (RTK) program, the RTK reporting requirements were removed to minimize reporting overlap. For more information on state-expanded TRI reporting, a detailed discussion is presented in the "Status of State TRI Programs" section of the TRI Public Data Release, State Fact Sheets. (U.S. EPA, 1999g) This section of the Public Data Release contains a survey administered by the National Conference of State Legislatures to all states on their TRI data use and expansion activities.

As of 1994, only Arizona, Massachusetts, Minnesota, and Wisconsin required or were planning to require expanded state TRI reporting to include non-manufacturing facilities (NCSL, 1995). Under the expanded state requirements, non-manufacturing facilities are required to file Form Rs with the state, but are not required to file with the federal EPA. In addition, some states require facilities to report release information beyond that required by the federal TRI program. Overall, however, the additional data collected by states are far less complete and uniform than would be available under an expanded federal TRI program. Descriptions of how state programs differ from federal TRI requirements are given below.

<u>Massachusetts</u>

The Massachusetts Toxics Use Reduction Act of 1989 (TURA) covers facilities in the following SIC codes:

A. mining (SIC codes 10-14)
B. manufacturing (SIC codes 20-39),
C. transportation, communications, utilities (SIC 40, 44-49),
D. wholesale trade (SIC 50 and 51),
E. personal services (SIC 72),

F. business services (SIC 73),
G. automotive repair, services, and parking (SIC 75),
H. and miscellaneous repair services (SIC 76).

Initially, TURA covered the same facilities and chemicals as the federal TRI program. As of 1995, TURA requirements expanded to include facilities under the above SIC codes which use chemicals that are listed as hazardous substances under §101(14) and §102 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). (These chemicals are listed at 40 CFR §302.4) Massachusetts otherwise uses the same employee and manufacture/process/use thresholds and chemical list as the federal TRI program (TURI, 1994). Federal facilities are exempt from TURA reporting requirements.

Facilities covered under TURA must file an annual report called a Form S (similar to Form R) which identifies the listed chemicals used during the year in each production process, the percentage reduction of toxic by-products and toxic emissions compared to a defined base year, and the toxic use reduction techniques used to reduce the wastes. Data from the Form Ss are entered into the state Toxics Use Reduction Inventory. In addition, as of 1995, facilities are required to prepare a detailed toxic use reduction plan every two years (MA DEP, 1993).

Wisconsin

In 1996, Wisconsin required mining operations (SIC codes 10 through 13) to file Form Rs to the state. In addition, public agencies, public and private educational facilities, and public and private research facilities in Wisconsin are subject to federal TRI reporting requirements. Aside from the additional SIC codes, Wisconsin's Right-To-Know reporting requirements are identical to those of the federal TRI program (NCSL, 1995; BNA, 1995; Dunst, 1995)

Conclusion of Availability of TRI-like Data at the State Level

Although some states have built on the foundation of TRI data with additional state reporting requirements, their data do not have major redundancies with, and therefore are not substitutes for, the current TRI or the proposal to expand TRI. The advent of federally mandated TRI reporting has resulted in many states adopting Form R for their state reporting, and provided a strong impetus for states to remove redundancies in their own reporting in order to minimize costs to facilities in their jurisdictions. Information collected by states above and beyond federal reporting requirements may be available in piecemeal fashion.

Inventory Data

For each listed toxic chemical, a regulated facility must complete data element 4.1 of Part II of Form R, which asks for the "Maximum Amount of the Toxic Chemical On-Site at Any Time During the Calendar Year." Maximum amounts (in pounds) are reported in ranges that increase

by powers of ten. Alternative sources of "maximum amount on site" chemical inventory data include EPCRA Section 312 Tier I and II reports.

EPCRA (§311-312) requires that states establish plans for local chemical emergency preparedness and that inventory information on hazardous chemicals be reported by facilities to state and local authorities. "Hazardous chemicals" are defined under the Occupational Safety and Hazard Administration's (OSHA) requirements -- essentially any chemical that poses physical or health hazards. The relevant regulations are detailed in 40 CFR §370. Data elements similar to both TRI and Tier I/II reports make EPCRA Tier I/II the best candidate for an alternative source of TRI "maximum amount on site" inventory information.

EPCRA Section 312 outlines a "two-tier" approach for annual inventory reporting. All facilities that store hazardous or extremely hazardous substances must submit at least a Tier I and often a Tier II form as well. Tier I requires reporting on broad categories of physical hazards such as fire, sudden release of pressure, and reactivity, as well as acute and chronic health hazards. Upon request by a Local Emergency Planning Committee (LEPC), State Emergency Response Commission (SERC), or fire department, a facility may be required to submit the more detailed Tier II form (which may be submitted instead of the Tier I form). Tier II requires chemical specific information by CAS number. For example, a Tier I report might state that a facility stores 3,000 pounds of chemicals that pose chronic health hazards, while a Tier II form for the same facility would report 1,000 pounds of toluene and 2,000 pounds of benzene on-site. Approximately 33 states require regulated facilities to submit Tier II forms, and most of the remaining states recommend that facilities submit Tier II forms.

A regulated facility is required to submit this information to each of the following groups: LEPCs, SERCs, and the local fire department with jurisdiction over the facility. A facility must submit an annual report for every chemical which requires an MSDS and which exceeds certain reporting thresholds for the amount of chemical stored on site at any one time. The reporting threshold for chemicals listed under EPCRA §302 as Extremely Hazardous Substances (EHSs) is the threshold planning quantity (TPQ), or 500 pounds, whichever is lower.[7] For all other chemicals with MSDSs, the threshold is 10,000 pounds. In general terms, the inventories contain information about the maximum quantity stored, the average quantity on-site at any given time, the location of the chemicals at the facility, and the number of days on-site.

Chemical coverage: The chemicals covered under Section 312 are all those defined as hazardous or extremely hazardous substances in Section 311 (essentially any substance that poses a health or physical hazard). All of these substances, for which facilities must submit MSDSs, are covered under OSHA's Hazard Communication Standard regulations. OSHA's definition of "hazardous chemical" not only includes toxic chemicals but also chemicals which are considered

[7] The Extremely Hazardous Substances and their TPQs are listed in 40 CFR Part 355, Appendices A and B.

health hazards, irritants, sensitizers, corrosive, fire hazards, explosive, as well as reactive. Consequently, many more chemicals are included under OSHA's rule than under TRI.

Industry/facility coverage: Facilities that are required to submit MSDSs to the state authorities for hazardous chemicals on site also must submit Tier I and/or Tier II forms. While there are no SIC exemptions for facilities that are covered under the reporting threshold requirements, facilities not included under OSHA's Hazard Communication Standard (e.g., mines) do not have to file reports. Because the Section 312 thresholds cannot be used to determine whether a facility covered under Section 312 also would be covered under Section 313 (e.g., whether a facility which stores 10,000 lbs. of a toxic chemical listed under TRI also meets Section 313 thresholds), the extent to which facilities potentially subject to TRI reporting would be captured by Section 312 is unknown.

Release statistics/reporting frequency: Facilities covered under EPCRA Section 312 must submit their Tier I and/or Tier II reports containing data with respect to the preceding calendar year to their respective states annually on or before March 1.

When completing a Tier II form, a covered facility must report the following information:

The chemical name or the common name of the chemical and the CAS registry number (as it appears on the MSDS);

- Indication of whether the hazardous chemical is an extremely hazardous substance;
- Indication of whether the hazardous chemical is present at the facility in its pure state or in a mixture, and whether it is a solid, liquid, or gas;
- The applicable health and physical hazard categories;
- An estimate (in ranges) of the maximum amount of the hazardous chemical present at the facility at any time during the preceding calendar year (e.g., 10,000 to 99,999 pounds);
- An estimate (in ranges) of the average daily amount of the hazardous chemical present at the facility at any time during the preceding calendar year;
- The number of days the hazardous chemical was found on-site at the facility;
- A brief description of the manner of storage of the hazardous chemical at the facility;
- A brief description of the precise location of the hazardous chemical at the facility, and

- An indication of whether the owner or operator of the facility elects to withhold location information on a specific hazardous chemical from disclosure to the public.

Facilities that choose to withhold from the public certain data on hazardous chemicals must nevertheless provide the information to the relevant authorities via the Tier II Confidential Location Information Sheet. The information contained on these sheets is not made available to the public.

Accessibility: The general public may access Tier I and Tier II information on a facility by facility basis by forwarding a written request to either the SERC or the LEPC. Tier II information on facilities which do not meet the reporting threshold requirements also may be obtained from the SERC or the LEPC if a "general need" can be demonstrated on the part of the requester. In these cases, the relevant authorities will request that the relevant facility or facilities fill out Tier II forms.

The ability to access state EPCRA data at a higher level of aggregation depends partly on the information technology resources of the state authority responsible for maintaining the data. Approximately one half of all the states have some type of computerized database, and of those, five states (Arkansas, Maryland, New Jersey, Oregon, and Rhode Island) store full Tier II data in a modem-accessible format. However, because these databases were created using different software and possess different database structures, it is a considerable challenge to aggregate the data contained within them.

In some states that do not yet maintain computerized databases of Tier I and Tier II information, the parties requesting information are required to cover the copying and administrative costs of the data retrieval. Because some EPCRA reporting programs are unfunded, fees charged for this service range from low to substantial. In other states, the requesting parties must go to the office and perform the copying themselves (ICF, 1996).

Conclusion on the Availability of Inventory Data

Tier I forms only request information based on possible health and physical hazards, and do not ask for chemical-specific data. The level of detail and the number of chemicals covered in Tier II "maximum amount on site" inventory data surpasses the chemical inventory data requested on TRI Form R. Not all states, however, require submission of Tier II forms. Therefore, some of the facilities that are covered under TRI do not have to report as detailed inventory information under EPCRA Section 312.

There also are significant difficulties with respect to public access of Tier I and Tier II data. All information is reported to state authorities; there is no national integrated database. In addition, because not all states have set up computerized databases to manage this information, extensive data retrieval and analysis is often both cumbersome and expensive.

Pollution Prevention Data

Form R requires that facilities report a variety of information that can be used for pollution prevention analyses, including non-quantitative reporting of pollution prevention activities, production ratios, and chemical-specific amounts of materials treated, recycled, released (one-time, and for the entire year), and shipped off-site in wastes.

EPA Databases with Pollution Prevention Data

Besides TRI, waste prevention and management data are collected at the federal-level through RCRA Biennial reports. RCRA biennial report data are compiled in the RCRAInfo database, as discussed below. The level of chemical specificity and flowthrough estimates for waste prevention and management information in RCRAInfo and TRI are not available in other federal data sources.

Biennial Reports contains pollution prevention information on hazardous waste large quantity generators and treatment, storage, or disposal facilities. Data are collected primarily by states, and are collated by EPA into the RCRAInfo database system. States are not required to use official Biennial Reports forms for the submission of data; EPA transfers data on state forms into the RCRAInfo system as necessary (ICF, 1993).

All large quantity generators must submit the following facility-specific information to RCRAInfo:

- whether any source reduction or recycling activities took place during the reporting year, and
- limiting factors that have affected source reduction and/or recycling activities.

In addition, for each hazardous waste generated, a generator must specify the following pollution-prevention related data:

- RCRA waste code and hazardous waste quantity generated;
- efforts to reduce the volume and toxicity of wastes, and
- reductions in volume and toxicity actually achieved compared with those achieved in previous years.

If a hazardous waste has been minimized as the result of new activities implemented in the reporting year, the generator also must report the following pollution-prevention related information:

- quantity of waste recycled;
- source reduction quantity; and
- waste minimization activity implemented (e.g., waste segregation, inventory control).

RCRA Biennial reports provide some qualitative and quantitative pollution prevention information, but, at a systems level, do not have the same facility or chemical coverage as TRI. The Biennial Reports system is not a substitute for TRI pollution prevention data. RCRA Biennial reports only include hazardous wastes; pollution prevention data contained in TRI includes information on wastes or process by-products in all production phases and media. In addition, the chemical reporting universe is different between the two systems. The universe of toxic chemicals regulated under TRI differs from the universe of listed hazardous wastes or chemicals with hazardous waste characteristics regulated by RCRA.

Also, the facility universes captured by the two systems are not the same. RCRA Biennial reports are only completed by RCRA large quantity generators, while TRI reports are required by facilities in manufacturing industries that exceed employee as well as chemical manufacturing, process, and use thresholds. The Biennial Reports facility universe is also different due to RCRA waste exclusions and exemptions. For example, wastes mixed with domestic sewage that are excluded from Biennial Reports reporting can be an indirect water discharge that may be covered under TRI reporting.

The pollution prevention reporting in Biennial Reports contains information on hazardous waste minimization and recycling efforts. Where this information does overlap with TRI pollution prevention reporting, it does not contain the same level of detail. For example, in some cases Biennial Reports pollution prevention information applies to wastestreams consisting of chemical mixtures, while TRI pollution prevention data are chemical specific. Since Biennial Reports waste codes are more general in nature than CAS numbers, a facility's waste mixture could change from year to year, and yet it might report the same waste code. Lack of precision in reporting of waste contents also could result in a situation where a facility reduces the aqueous quantity of its wastes, and thus appear to be preventing pollution. However, by changing its waste mixture, the facility might even increase the amount of toxic material entering the wastestream without modifying its Biennial Reports reporting. That the exact contents of a facility's waste mixture cannot always be determined may make it difficult to extract chemical-specific data from Biennial Reports.

State Environmental Agency Databases

Under current TRI reporting procedures, facilities send copies of all TRI reports to both state and federal agencies. Many states currently rely on the pollution prevention data received from TRI for planning and targeting purposes (U.S. EPA, 1993), and do not require additional reporting. However, two states, New Jersey and Massachusetts, have passed laws to collect materials accounting pollution prevention data that exceeds that found in Section 8 of Form R.

Twelve other states have pollution prevention planning requirements in place, but only Massachusetts and New Jersey currently have mandatory materials accounting.[8]

Massachusetts Pollution Prevention Reporting: The Massachusetts Toxics Use Reduction Act (TURA) has required firms to report on toxic use for individual "production units" at their facilities since July of 1991. Facilities submit annual Toxics Use Reports (Form S) to the Massachusetts Department of Environmental Protection (MDEP) as a supplement to the TRI Form R. With the exception of qualitative source reduction pollution prevention reporting requirements and production ratios, TURA pollution prevention reporting requirements are additional to those collected by TRI.

Form S records information on the quantity of the toxic substance used on a facility-wide and production unit basis. Form S is divided into two parts: 1) cover sheet and 2) chemical reports. The cover sheet contains general facility information, a certification statement, and an identification of production units at the facility. Form S chemical reports must be filed on each listed toxic chemical manufactured, processed, or otherwise used at greater than 10,000 pounds per year (ICF, 1993). The form contains the following information on chemical use and pollution prevention:

A. facility-wide and production unit data for each chemical,
B. year-to-year reporting changes, and
C. production unit reports.

New Jersey Pollution Prevention Reporting: New Jersey has collected toxic chemical release and pollution prevention data longer than the TRI program has been in existence. Since 1979, New Jersey has collected toxic chemical release and pollution prevention data through a variety of separate programs and activities, gradually narrowing down the scope of these reporting requirements as TRI was introduced and expanded to include pollution prevention. In fact, the results of an Industrial Survey, which collected release and throughput data from 15,000 New Jersey facilities, were used to develop the list of SARA Title III chemicals (U.S. EPA, 1995d). For these reasons, New Jersey data, unlike data collected in Massachusetts, still overlaps somewhat with data collected on TRI Form R. New Jersey pollution prevention data also contain detailed throughput information which exceeds that currently contained in TRI. These throughput data require facilities to account for all amounts of the chemical brought or produced on-site, shipped off-site in products, destroyed on-site through treatment, recycled on-site, and released to the environment or shipped off-site in wastes.

8. For a detailed comparison of materials accounting data elements reported to TRI, New Jersey, and Massachusetts, see (U.S. EPA, 1995d).

New Jersey's additional reporting requirements apply to all TRI chemicals and all facilities covered by TRI (SIC codes 20-39). Originally, New Jersey required facilities manufacturing, processing, or using an Environmentally Hazardous Substance (EHS) to report toxic chemical release information (U.S. EPA, 1995d). The original EHS list was comparable to the list of chemicals generated by the Industrial Survey mentioned above, and therefore similar to the original SARA Title III list. The list of chemicals for which New Jersey now collects toxic chemical release and pollution prevention information has been expanded to contain those in the national TRI listing.

Alternative Sources of Emergency Release Data

TRI Form R requires that facilities report the quantity of TRI listed chemicals released to the environment as a result of remedial actions, catastrophic events, or one-time events not associated with production processes. Accidental release data reported to TRI also are potentially reported to the National Response Center (NRC). However, as discussed below, the NRC is a database of initial notifications, made during or immediately after a release occurs. For this reason, data within NRC may be incomplete or inaccurate and will not substitute for TRI emergency release data.

Emergency Response Notification System (ERNS)

The Emergency Response Notification System (ERNS) is a computer database containing information on release notifications of oil and hazardous substances that have occurred throughout the United States and have been reported to the National Response Center (NRC) and or one of the 10 EPA Regions. Initial notifications, which comprise most of the information in ERNS, supply preliminary information on a release and are cited as unverified data. Depending on the severity of the release and any response actions taken, the EPA or Coast Guard On-scene Coordinator (OSC) may obtain further information at the site of the release or through discussions with state and local officials. Data has been collected into ERNS since 1987.

ERNS contains many types of information on specific notifications of releases of oil and hazardous substances, including the following: discharger information, date of release, material released, cause of release, damage/injuries/deaths, amount released, source of release, incident location, response actions taken, authorities notified, and environmental medium into which the release occurred.

ERNS serves as a mechanism to document and verify incident-location information as initially reported and is utilized as a direct source of easily accessible data needed for analyzing releases of oil and hazardous substances. ERNS information is used for guidance and regulatory development, Congressional inquiries, response preparedness, compliance and enforcement support, statistical and trend analyses, program planning and management, and responses to requests for information from the public.

ERNS supports the release notification requirements of section 103(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended; section 311(j) of the Clean Water Act; and sections 300.300 and 300.405 of the National Oil and Hazardous Substances Contingency Plan, which begins at 40 CFR Part 300.

FIGURE 3 - Statutes Requiring Accidental Release Reporting

Statute	Reporting Requirements	Percent of Notifications
CERCLA	Requires that the release of a CERCLA hazardous substance that meets or exceeds the reportable quantity (RQ) set forth in 40 CFR §302.4 must be reported to the NRC.	19 percent

EPCRA	Requires that the release of an RQ or more of an EPCRA extremely hazardous substance or a CERCLA hazardous substance (one pound or more if a reporting trigger is not established by regulation) that results in exposure of people outside the facility boundary be reported to State and local authorities.	<24 percent
HMTA	Requires that the release of a DOT hazardous material during transportation be reported to the NRC under certain circumstances such as death, injury, significant property damage, evacuation, highway closure, etc.	<24 percent
CWA	Requires that the release of oil be reported to the NRC if the release: 1) violates applicable water quality standards; 2) causes a film, sheen or discoloration of the water or adjoining shoreline; or 3) causes a sludge or an emulsion to be deposited beneath the surface of the water or upon the adjoining shorelines.	57 percent
Source: U.S. EPA, 1995e.		

ERNS is a database of initial notifications, made during or immediately after a release occurs. Because the data are reported at such an early stage, the exact details of the release are often unknown and are therefore not reported. It is estimated that two-thirds of the 193 data fields in ERNS are not completed for most release notifications. In addition, duplicate reports may appear in the database because of follow up calls that are not identified as such or observers reporting a release that has already been reported. Approximately five percent of ERNS records are estimated to be duplicates. (U.S. EPA, 1995e)

Integrated Management Information System (IMIS)

IMIS is an OSHA database that contains records of workplace inspections conducted by OSHA industrial hygienists. Two general types of inspections are conducted by OSHA: 1) Scheduled or planned inspections which are on-site enforcement inspections to verify compliance with OSHA standards, and 2) Unplanned inspections which are investigations of workplace incidents where there is one fatality or three or more worker hospitalizations (five or more worker hospitalizations were required to trigger an inspection before 1993). Inspection data are input and stored within IMIS, providing a record of OSHA activities at each workplace that has been inspected.

OSHA is estimated to add more than 120,000 inspection records per year, of which 4,000-5,000 are related to accidents. Accident inspections include a short description of the incident, information regarding each worker that is injured, and any hazardous substances that may be involved. It is estimated that 100 incidents reported each year involve hazardous substances. A

four digit hazardous substance code is entered into IMIS rather than a CAS number. The quantity of hazardous material released is not entered. In addition, it can not be assumed that the reported death or injury was a result of an accidental release even in cases where a hazardous substance was involved. For example, if a maintenance person cleans the inside of a storage tank and is asphyxiated by the nitrogen rich environment, the death is not the result of an "accidental release". (U.S. EPA, 1995e)

Summary on Availability of Pollution Prevention and Accidental Release Data

The data systems discussed above cannot replace TRI's pollution prevention and accidental release data. Difficulties exist in chemical and facility coverage, reporting frequency, and the level of data detail. Specifically, RCRA Biennial reports cannot easily be used as a substitute for TRI pollution prevention data. While Biennial Reports provides some qualitative and quantitative pollution prevention information, it does not have the same facility or chemical coverage as TRI. Biennial Reports only includes hazardous wastes, while TRI pollution prevention data includes information on wastes or process by-products in all production phases and media. Because Biennial Reports collects data organized by Biennial Reports waste codes, it also lacks the chemical-specific detail that TRI contains. In addition, the facility and chemical reporting universes are different between the two systems.

Overlap of State pollution prevention data with that found in TRI is minimal; state data could not be used to replace current TRI pollution prevention reporting requirements. Under current TRI reporting procedures, facilities send copies of all TRI reports to both state and federal agencies. Many states have come to rely on this easily available source of pollution prevention data. As Massachusetts and New Jersey demonstrate, even those states that had taken a proactive role in collecting toxics release and pollution prevention data scaled back their programs with the introduction of mandatory TRI reporting. No state program collects all of the pollution prevention data currently contained in Form R, though some states (e.g., New Jersey and Massachusetts) augment TRI pollution prevention data with requirements additional to those contained in Section 8 of Form R. These data, such as materials accounting data, are used at the state level for a variety of purposes, including benchmarking of facility pollution prevention efforts and the determination of toxic material flows in production processes.

In addition, accidental release data reported to ERNS does not substitute for TRI accidental release data. ERNS is a database of initial notifications, made during or immediately after a release occurs. For this reason, data within ERNS may be incomplete or inaccurate.

Value Added from the TRI Reporting System

In addition to containing data not available through other sources, TRI enhances the usefulness and functionality of the data by allowing public access to the data, linking release data across media (e.g., water, air, land), and providing definitional consistency for the units of

measurement. These features give TRI additional advantages over any emissions data system that might be assembled from non-TRI sources.

Perhaps the most important advantage TRI possesses over non-TRI sources is the information that can only be found in TRI. As described, data unique to TRI include chemical-specific multimedia release information as well as important pollution prevention information. For example, AFS currently only tracks a limited amount of HAP emissions, and Biennial Reports does not track hazardous waste treatment, transfer, or disposal at a chemical-specific level. TRI can provide this as well as other types of information not available elsewhere.

Because an important part of TRI's mission is to provide emissions data to the public, many different methods of access to TRI have been implemented. Data analysis difficulties aside, access issues make it very difficult for the general public to assemble non-TRI data into a TRI-like form. Current methods of accessing TRI include on-line resources such as EPA's Envirofacts, TRI Explorer, the National Library of Medicine's TOXNET, RTK NET, electronic media such as CD-ROM, and printed media. TRI places all of the information in one location, and providing many avenues of access to that data.

Another major problem associated with using non-TRI sources for TRI-like data is linking facility release information across various release media. In the past, the tool used to identify facilities reporting to multiple systems was the Facility Indexing System (FINDS). FINDS was a centralized inventory of facilities monitored or regulated by EPA, and served as an index database to other EPA Program Office databases. This system will be will be replaced with the Facility Registry System (FRS), a system developed through the assistance of the Facility Registry System.

The Agency is also working on a number of other initiatives designed to make access easier for EPA and the public. Some of these initiatives and projects include the One Stop Reporting Program, the Common Sense Initiative, the Electronic Data Interchange Initiative, the Enforcement and Compliance Information Initiative, Environmental Monitoring for Public Access and Community Tracking , IDEA and others.

The above advantages notwithstanding, it is important to recognize that these systems have certain shortcomings with respect to any effort to assemble TRI-like information from non-TRI sources. For example, one significant difficulty with IDEA involves problems with the FINDS linkages themselves. Because of various data inconsistencies, many facilities are not linked to all of their permits through IDEA, or have incorrectly linked permits. TRI's reporting mechanism helps to reduce this problem within TRI, where data from a facility is reported at one time in one place. In addition, because IDEA is designed to primarily provide compliance and enforcement data, the system does not always include emissions data even when such data exists. For example, while IDEA contains AFS compliance data, it does not contain AFS emissions data. Consequently, direct access to AFS is required to obtain AFS emissions data, which still does not

include much information on air toxics. Finally, the general public would probably encounter difficulties using IDEA because of access restrictions and the technical knowledge required to effectively utilize IDEA.

The lack of definitional consistency also can result in difficulties in understanding information aggregated across non-TRI databases. A substantial amount of effort would be required to overcome discrepancies in units of measure, chemical coverage, reporting thresholds, reporting exemptions, and reporting frequencies in the various databases. TRI overcomes many of these problems by allowing the user to view cross-media data using a single set of reporting definitions and requirements.

The different units and data aggregation methodologies used by various non-TRI sources can lead to data incompatibilities. For example, because PCS data are reported in terms of PCS *parameters* (usually chemical concentrations as opposed to units of mass), some fairly involved calculations must take place before that data can be converted into TRI-like units. For Biennial Reports, facilities report their hazardous waste throughput in terms of aggregated waste *codes*, which cannot always be easily broken down to specific chemicals. Discrepancies between the way chemical information is reported to the various non-TRI databases can make it difficult or even impossible to accurately sum totals of pollutants across databases. Because all TRI release and transfer data are reported in a uniform fashion, no such difficulty exists in TRI.

Databases often also have different reporting frequencies, which can make it difficult to assemble high quality historical data at the facility level. Biennial Reports requires facilities to report data every two years, whereas AFS requires but does not enforce annual reporting. Because TRI requires annual reporting from all covered facilities, TRI effectively overcomes this problem.

In summary, the value which TRI alone adds to the community at large is significant. The many technical, access-related, and data coverage problems associated with attempting to use non-TRI sources for TRI data makes impractical the substitution of these sources for TRI.

5(b) Consultations

EPA has consulted with a large number of individuals and organizations throughout all segments of the public in the development and continued implementation of the TRI program. Since the initial development of the program, feedback through EPA's outreach efforts have been received from various organizations, including environmental and public interest groups, trade associations, and individual representatives. This feedback is continually sought and incorporated in the ongoing evolution of the 313 program.

During the initial development of the TRI program, EPA consulted with a large number of individuals and organizations throughout all segments of the public in developing the rule, form, and instructions. This consultation has continued throughout the operation of the program, and has been expanded due to the proposed expansion of TRI to include additional industry groups. Among the industry-oriented organizations that are or have been involved with the TRI program are:

American Association of Exporters and Importers
American Chemistry Council
American Chemical Society
American Coke and Coal Chemical Institute
American Gas Association
American Iron and Steel Institute
American Petroleum Institute
American Pharmaceutical
American Public Power Association
American Textile Manufacturers Institute
American Trucking Association
American Warehouse Association
Air Transport Association
American Wood Preservers Institute
Associated Gas Distributors
Association of Metropolitan Sewerage Agencies
Cement Kiln Recycling Coalition
Chemical Manufacturers Association
Chemical Producers and Distributors Association
Chemical Specialties Manufacturers Association
Chem-Tex Solvents Corporation
Chlorine Institute
Domestic Petroleum Council
Dry Color Manufacturers Association
Edison Electric Institute
Electric Power Institute
Environmental Industries Association
Environmental Technology Council
Fertilizer Institute
Hazardous Material Advisory Council
Independent Lubricant Manufacturers Association
Independent Liquid Terminals Association
Independent Petroleum Association of America
International Precious Metals Institute
Interstate Mining Compact Commission

Interstate Oil and Gas Compact Commission
Lead Industries Association
Metal Powder Industries Federation
National Agricultural Chemicals Association
National Air Transport Association
National Association of Chemical Distributors
National Association of Chemical Recyclers
National Association of Manufacturers
National Association of Printing Ink Manufacturers, Inc.
National Electrical Manufacturers Association
National Food Processors Association
National Mining Association
National Rural Electric Cooperative Association
National Screw Machine Products Association
National Solid Waste Management Association
Petroleum Marketers Association of America
Silver and Gold Institute
Small Business Administration
Society for Mining, Metallurgy and Exploration
Solid Waste Association of North America
Steel Service Centers Institute
Synthetic Organic Chemical Manufacturers Association
The Society of the Plastics Industry, Inc.
U.S. Chamber of Commerce

With the addition of Federal facilities to TRI in 1993 (Executive Order 12856), other Federal agencies such as the Department of Defense and Department of Energy now play an active role in TRI, including as participants in Interagency Workgroups. In addition to the industry-oriented groups, EPA has also worked with public interest groups in the development of the TRI program. Environmental and public interest groups assisted in the development of the Form R, testing of the NLM database, and have provided feedback on a wide range of public access issues. Among the environmental and public interest organizations who have been, or are, involved with TRI are:

AFL-CIO
American Library Association
Environmental Defense Fund
Environmental Law Institute
INFORM
Information Industry Association
Mineral Policy Center
National Wildlife Association

Natural Resources Defense Council
OMB Watch
Sierra Club
U.S. Public Interest Research Group
Working Group on Community Right-to-Know

Discussions with all of the above groups have resulted in changes to the program that have had beneficial effects, including burden reduction.

Over the course of the past eight years, EPA has used the regularly-held public meetings of the Forum on State and Tribal Toxics Action (FOSTTA), which represents state environmental agencies, and the National Advisory Council on Environmental Policy and Technology (NACEPT), which includes representatives from industry, environmental organizations, states, and academia, as public venues to consult on TRI and related issues. Major issues discussed through these groups include the expansion of TRI to include both additional chemicals and facilities; implementation of PPA requirements; redesign of the Form R; and development of the Alternate Reporting Threshold Modification. EPA officials routinely meet with representatives from industries, states, local governments, environmental organizations, and community groups on specific issues related to TRI, as the need for consultation arises.

EPA also makes a concerted effort to receive input from small businesses. Many trade associations and other industry organizations with which EPA has held discussions include small businesses as members or participants. These groups have represented the interests of some small businesses to EPA, and have helped to inform businesses about TRI. In addition, EPA has addressed forums such as the Small Business Roundtable regarding its initiatives, and has briefed officials of the Small Business Administration as well as EPA's Small Business Omsbudsman and Regional Small Business Liaisons.

Finally, EPA agency established a series of Stakeholder meetings in 1997 and 1998 to address issues concerning reporting requirements and possible changes to the Form R. Specific issues discussed at these meetings included ways of improving the TRI program, ways of reducing the burden of TRI reporting, and possible improvements to the TRI reporting form.

5(c) Effects of Less Frequent Collection

Section 313 requires annual reporting. Section 313(I) permits EPA to modify the reporting frequency by rulemaking, however, EPA must first notify Congress and then wait to initiate the rulemaking to propose the modification for at least 12 months. In addition, EPA must find:

(A) ...that the modification is consistent with the provisions of subsection (h) of [section 313] based on -

(i) experience from previously submitted toxic chemical release forms,

(ii) determinations made under paragraph (3).]

Paragraph (3), in turn, provides that EPA must determine

(A) The extent to which information relating to the proposed modification provided on the toxic chemical release forms has been used by the Administrator or other agencies of the Federal government, States, local governments, health professionals and the public.

(B) The extent to which information is (i) readily available to potential users from other sources, such as State reporting programs, and (ii) provided to the Administrator under another Federal law or through as State program.

(C) The extent to which the modification would impose additional and unreasonable burdens on facilities subject to the reporting requirements under this section.

However, EPA may not permit less frequent reporting unless it can find that such modification is consistent with the purposes of the Act, as determined by previously submitted Form Rs. Since TRI represents the best available database tracking toxic chemical releases in the U.S., changes in reporting frequencies would have profound impacts on the quality and value of these data for purposes of planning and establishing baselines in both government and industry.

Less frequent reporting would also significantly delay the availability of the data to the public. Form Rs are required to be submitted on or before July 1 following the year in which the reported releases and transfers occur, and then national data are available from EPA within a year after that. Public access to the most current toxic chemical release data and other waste management information possible could then be severely limited if reporting were to occur less frequently.

5(d) General Guidelines

This ICR adheres to the guidelines stated in the 1980 Paperwork Reduction Act, as amended, OMB's implementing regulations, and all applicable OMB guidance.

Although reporting facilities are required to identify the chemical for which reports are submitted, they can claim the chemical identity as a trade secret. A generic name must be provided as part of the information made available to the public. EPA securely stores and maintains the true identity of the chemical. This is further discussed in 5(e)(i).

EPA is actively encouraging the use of automated techniques, most notably PC-based report generating programs produced both by the Agency and by the private sector and other

submissions on magnetic media. EPA recognizes that not all reporting facilities are able to or are interested in investing the time and funds necessary to employ such automated techniques. The final decision on how to report is ultimately the reporting facility's.

Small facilities (less than 10 full-time employees or equivalent) are exempt from reporting under section 313. An optional range reporting provision and an alternate threshold have been promulgated that afford burden reduction to all facilities but are particularly beneficial to smaller facilities with small releases and wastes.

5(e) Confidentiality and Sensitive Questions

(i) Confidentiality

Respondents may designate the specific chemical identity of a substance as a trade secret. Procedures for submission and review of trade secret claims under section 313 are set forth in 40 CFR 350. This rule implements the general trade secret provisions of EPCRA. When a respondent claims the chemical identity to be a trade secret, EPA, upon substantiation of the claim, will not disclose the identity of the chemical to the public. EPA securely stores forms with trade secret information and allows access to those documents only to persons with Trade Secret clearance. Data made available to the public through any means does not include trade secret information.

(ii) Sensitive Questions

This collection does not request any sensitive information.

6. ESTIMATING THE BURDEN AND COST OF THE COLLECTION

6(a) Estimating Respondent Burden

This section presents the burden of this information collection activity on respondents in terms of the time required for facility personnel to perform the steps outlined in Section 3 of this document. These burden estimates are based upon previous ICRs and economic analyses, respondent experience as reflected in comments to EPA and other parties, and information acquired through site visits and telephone interviews.

The burden to respondents is estimated for Form R requirements (including compliance determination and supplier notification) and petitions. Burden estimates are developed for the compliance activities and then multiplied by the number of facilities or reports (as appropriate) to estimate the total burden to respondents. The burden estimates used by EPA are national average values. As with any average, some facilities will be above the average, and others will be below it. Large, complex facilities may require more than the average time to comply. However, there

are many other facilities subject to the rule that are not large or complex. Therefore, EPA believes that its burden estimates represent reasonable national averages.

Form R Requirements

The tasks associated with TRI reporting during the period of this ICR include the following:

- **Compliance Determination:** Facilities must determine whether they meet the criteria for Section 313 reporting. This task includes the time required to become familiar with the definitions, exemptions, and threshold requirements under the TRI program, to review the list of TRI chemicals, and to conduct preliminary threshold determinations to determine if the facility is required to report.

- **Rule Familiarization:** Facilities that are reporting under section 313 for the first time must read the reporting package and become familiar with the reporting requirements. This includes the time needed to review instructions, and the time needed to train personnel to be able to respond to a collection of information.

- **Calculations and Report Completion:** Facilities must gather data and perform calculations to provide the information required on the form. This task includes the time required to search data sources and the time to complete and review the information.

- **Recordkeeping and Submission:** Facilities must maintain recordkeeping systems and mail the report to EPA and the State in which the facility the facility is located. This task includes the time required to transmit or otherwise disclose the information.

- **Supplier Notification:** Certain suppliers of mixtures or trade name products containing reportable substances must annually notify their customers of the product's composition, if the customer is subject to Section 313 reporting. This task includes the time required to inform customers, either by letter or through the materials safety data sheet (MSDS) for the product.

The remainder of this section discusses the unit burden hour estimates for each specific industry activity. Activities are organized into two categories: those performed at the facility level and those that must be performed for each Form R submitted. The estimated hours required to complete each activity are summarized in Table 1 by labor category. Table 2 presents the annual

estimated burden hours according to type of facility for facilities that submit 3 Form Rs each.[9] This represents the burden on a "typical" facility, although many facilities file fewer Form Rs and some file more. The total annual burden to all facilities is discussed in Section 6(d). Note that total annual burden is based on unit reporting burdens multiplied by the total number of facilities or forms as appropriate; it is not based on the "typical" facility burdens shown in Table 2.

Table 1
Average Annual Burden Hour Estimate by Activity

Category	Activity	Management	Technical	Clerical	Total Hours
Facility Level	Compliance Determination - all facilities	1	3	0	4
	Rule Familiarization - first-time filers only	12	22.5	0	34.5
	Supplier Notification	0	7	17	24
Per Form R	Calculations and Report Completion - first-time filers only	20.9	45.2	2.9	69.0
	Calculations and Report Completion - subsequent year filers only	4.4	9.5	0.6	14.5
	Recordkeeping/Submission - all filers	0	4	1	5

Table 2
Average Annual Burden Hour Estimate per Facility in Each Subsequent Year

Type of Facility	Average Annual Hours Burden			
	Management	Technical	Clerical	Total Hours
Compliance Determination Only	1	3	0	4
Compliance Determination and 3 Form Rs	14.2	43.5	4.8	62.5
Compliance Determination, 3 Form Rs and Supplier Notification	14.2	50.5	21.8	86.5

Activities Performed at the Facility Level

Compliance Determination - A facility must report under Section 313 if it: (1) is within an SIC code or industry group covered by the TRI program; (2) has ten or more full-time equivalent (FTE) employees; and (3) manufactures, processes or otherwise uses any of the listed chemicals above the threshold quantities. All facilities must determine if they meet these criteria. Most facilities incur little burden to make determinations regarding the first two criteria. Many facilities

[9] Approximately 70 percent of affected facilities file 3 or fewer Form Rs. The most common number of reports filed is actually 1.

require time for the management and technical staff to determine the types of chemicals used at the facility and whether these chemicals are manufactured, processed, or otherwise used above threshold levels, in order to make the determination under the third criterion.

To make the determination, a facility will typically review whether it manufactures, processes, or otherwise uses any of the chemicals in any quantity, and then determine whether it exceeds a threshold quantity. In many cases, particularly at facilities that do not manufacture, process or otherwise use any listed chemicals, this first activity should be completed within a relatively short period of time. The second activity may involve a more detailed set of calculations.

The average burden for compliance determination is estimated to be 4 hours per facility per year. This average reflects the time requirements of facilities that do not have listed chemicals on-site, have very large or small quantities of listed chemicals (*i.e.*, are significantly above or below the thresholds and thus do not require a significant amount of time to make the determination), or have not had significant changes from the prior year, as well as facilities that have more complex and time-consuming compliance determination requirements.

Rule Familiarization - If a facility will be reporting under the section 313 requirements for the first time, facility staff must review and comprehend the reporting requirements. At a minimum, this effort will involve reading the instructions to the Toxic Release Inventory Reporting Form R, however, it may also involve consulting EPA guidance documents, attending a training course, and/or calling the EPCRA technical hotline. The cost associated with rule familiarization occurs only in the first year that a facility becomes subject to reporting. In subsequent years, staff are assumed to be familiar with the requirements that apply to their facility. Thus, the facility would no longer bear this cost. Similarly, facilities that already report on one or more existing TRI chemicals will not incur a rule familiarization cost.

It is estimated that facilities reporting under section 313 for the first time will need to make a one-time expenditure of 34.5 hours for rule familiarization. This burden estimate is comprised of 12 hours of management time and 22.5 hours of technical time.

Supplier Notification - Certain suppliers of mixtures or trade name products containing reportable substances must annually notify their customers of the product's composition if the customer is subject to Section 313 reporting or sells the product to another company that is subject to reporting. Facilities may be subject to the supplier notification requirements even if they are not covered by the Section 313 reporting requirements. For example, a facility with less than ten full-time employees or that does not meet reporting thresholds may still be required to notify certain customers. Supplier notification is required so that customers can make threshold determinations and complete reports for their own facilities. The notification can be provided by a letter identifying the chemical by name and CAS number, and indicating its percentage by weight in the formulation. It can also be provided on the materials safety data sheet (MSDS) for

the product. On average, approximately 24 hours per facility are estimated for compliance with this requirement.

Activities Specific to Completing the Form R

Calculations and Report Completion - Facilities that determine they must report under Section 313 will incur additional burden to retrieve, process, review, and transcribe information to complete each report. Most of the time required for form completion is to calculate releases, transfers, and other waste management practices; relatively little time is required to copy information to the form. The facility must complete one Form R for each listed chemical it is reporting to TRI.

The burden is estimated to average 14.5 hours per Form R for on-going, annual reporting. This estimate is based on feedback from actual respondents, and is lower than the estimate of 47.1 hours based on engineering estimates that appeared in previous TRI ICRs and economic analyses.[10] To complete the Form R, facilities will need to verify and update data, review previous calculations, and modify the information reported on the previous year's Form R. For a facility completing 3 forms in subsequent years, this results in an average estimated burden of 43.5 hours. The estimate for first year calculations and report completion is unchanged at 69 hours per Form R.

Recordkeeping and Submission - After a facility has completed the form, it incurs additional burden for recordkeeping and submission associated with filing a Form R report. Recordkeeping allows a facility to use the information in making calculations in subsequent years and as documentation in the event it receives a compliance audit. Facilities must maintain records used to provide the information required on the Form R; those records may include estimation methodology and calculations, engineering reports, inventory, incident and operating logs, and other supporting materials. Recordkeeping and submission are estimated to take an average of 5 hours per Form R, which works out to 15 hours for a facility filing 3 Form Rs.

Average Burden per Respondent

The estimated burden per respondent depends on the type of respondent and the number of reports submitted. For example, the burden for facilities that only perform compliance determination is estimated to average 4 hours per facility. For facilities required to file 3 Form Rs, but not required to comply with supplier notification, the burden is estimated to average 62.5

[10] USEPA/OEI, *Estimates of Burden Hours for Economic Analyses of the Toxics Release Inventory*, June 10, 2002. The revised estimate is based on respondent experience, and reflects cumulative burden reductions resulting from increased familiarity with reporting requirements, improved guidance, computerization/automation, and other factors.

hours. For facilities submitting 3 Form Rs that are also required to comply with supplier notification, the average burden in the third year is estimated at 86.5 hours per facility.

Petitions

The activities required to prepare and file a petition are listed below. Included is a discussion of the burden associated with each activity. The time needed to complete these activities is presented in Table 3. The total annual burden for all petitions is estimated in Section 6(d).

Table 3
Average Burden Hour Estimate per Petition

Activity	Average Annual Hours Burden			Total Hours Burden
	Management	Technical	Clerical	
1. Read EPA Policy and Guidance	4	0	0	4
2. Plan Activities	2	1	0	3
3. Prepare Literature Search	2	7	0	9
4. Conduct Literature Search	0	48	0	48
5. Process, Review, and Focus Information	12	74	0	86
6. Write Petition	4	8	6	18
7. Review and Edit petition	4	8	2	14
8. Submit to EPA and File	0	0	3	3
Total Hours per Petition	28	146	11	**185**

These estimates assume prior knowledge by the respondent of the issues prompting the listing of specific chemicals. An additional assumption was made that the petitioners had no in-house library facilities and, consequently, that they would have to use a university library or similar facility. Based upon the experience of the previous reporting years, fewer than 5 petitions per year are expected. Following are specific descriptions of the activities associated with preparing and filing a petition for chemical listing or de-listing.

Read EPA guidance document and consult with EPA. The reading and interpretation of EPA policy and guidance notice is conducted by management and involves four hours per petition.

Plan activities. The planning activities are conducted jointly by management and technical personnel. Three hours per petition are required to complete these activities.

Prepare literature search. This activity would be conducted by both management and technical personnel, involving about nine hours.

Conduct literature search. The technical staff member conducts this activity, which requires about 48 hours per petition.

Process, review, and focus information. This activity would be completed by both technical and management personnel, involving a total of 86 hours per petition.

Write petition. This activity would be completed by a combination of technical, management, and clerical personnel. About 18 hours are required per petition to complete the writing.

Review and edit petition. A combination of management, technical, and clerical personnel would be involved in this activity, requiring a total of 14 hours per petition.

Submit petition to EPA and file. These activities would be done by the clerical personnel, requiring approximately three hours per petition.

Total respondent burden. The total burden of submitting a petition is estimated to average 185 hours.

6(b) Estimating Respondent Costs

The cost to respondents is based on the time needed to complete the tasks listed in Section 6(a) and the hourly cost of labor at appropriate levels (loaded labor rates). There are no specific capital costs associated directly with this information collection activity. There are some small additional costs for mailing and supplies. Total annual costs for all facilities are discussed in Section 6(d).

Form R Requirements

To determine the per-facility costs for typical respondents, the unit burden hour estimates for compliance activities are multiplied by fully loaded hourly rates for the appropriate categories of labor conducting these activities.[11] Loaded hourly rates are the product of wages, benefits, and overhead. Hourly wage rates are divided into three categories: managerial, technical, and clerical. Average wage and salary data for these categories are obtained from the Employer Costs for Employee Compensation (ECEC) report from the Bureau of Labor Statistics (BLS) for all goods-producing, private industries. The additional cost of benefits, such as paid leave and insurance, is also derived from information provided in the ECEC report. Loading factors for benefits are calculated separately for managerial, technical, and clerical labor by dividing the benefits

[11] USEPA/OEI, *Wage Rates for Economic Analyses of the Toxics Release Inventory Program*, June 10, 2002. Note that the wage rates used in this supporting statement have been inflated to March 2002 using an ECI-based adjustment factor of 1.03 as prescribed in this reference.

percentage of total compensation by the wage percentage of total compensation. Based on information provided by the chemical industry and chemical industry trade associations, an additional loading factor of 17 percent is applied for general overhead. This loading factor is added to the benefits loading factor, then applied to the base wage. The new wage rates were calculated using current data on salaries and benefits for these three labor categories. The fully loaded hourly wage rates as of March 2002 are shown in Table 4.

Table 4
Loaded Hourly Wage Rates by Labor Category

Labor Category	Average Hourly Wage	Benefit (% wages)	Overhead (% wages)	Loaded Hourly Rate
Managerial	$33.28	40.4%	17%	$52.38
Technical	$26.62	42.9%	17%	$42.57
Clerical	$14.39	43.5%	17%	$23.09

Average costs are summarized by activity in Table 5 and per facility in Table 6. The average cost per facility for those completing only compliance determination is $180. Based on the burden hour estimates in Table 1 and the loaded hourly rates in Table 4, the average subsequent year cost for a facility performing compliance determination and submitting 3 Form Rs is $2,703, while the cost for a facility performing compliance determination, submitting 3 reports, and complying with supplier notification is estimated to be $3,394.

Table 5
Average Annual Cost Estimate by Activity

Category	Activity	Management	Technical	Clerical	Total Cost
Facility Level	Compliance Determination - all facilities	$52	$128	$0	$180
	Rule Familiarization - first-time filers	$629	$958	$0	$1,587
	Supplier Notification	$0	$298	$393	$691
Per Form R	Calculations and Report Completion - first-time filers	$1,095	$1,924	$67	$3,086
	Calculations and Report Completion - subsequent year filers	$230	$404	$14	$648
	Recordkeeping/Submission - all filers	$0	$170	$23	$193

Table 6
Average Annual Cost Estimate per Facility

Type of Facility	Management	Technical	Clerical	Total Cost
Compliance Determination Only	$52	$128	$0	$180
Compliance Determination and Form R	$742	$1,850	$111	$2,703
Compliance Determination, Form R and Supplier Notification	$742	$2,148	$504	$3,394

Petitions

The primary cost to respondents for developing and submitting petitions under Section 313(e) will be the labor costs associated with the activities outlined in Section 6(a) of this document. These costs are the product of the labor hours expended to prepare the average petition, the wage rates for the employees involved in preparing the petitions, and the average number of petitions submitted annually. Based on the burden hour estimates in Table 3 and the loaded hourly rates in Table 4, the cost estimate for the preparation of a petition is presented in Table 7.

Table 7
Average Cost per Petition

Activity	Management	Technical	Clerical	Total
1. Read EPA Policy and Guidance	$210	$0	$0	$210
2. Plan Activities	$105	$43	$0	$148
3. Prepare Literature Search	$105	$298	$0	$403
4. Conduct Literature Search	$0	$2,043	$0	$2,043
5. Process, Review, and Focus Information	$629	$3,150	$0	$3,779
6. Write Petition	$210	$341	$139	$690
7. Review and Edit petition	$210	$341	$46	$597
8. Submit to EPA and File	$0	$0	$69	$69
Total Cost per Petition	$1,469	$6,216	$254	**$7,939**

Based upon the prior years of implementation of EPCRA Section 313, it is assumed that fewer than 5 petitions will continue to be submitted annually (in recent years, only 1 or 2 petitions have been submitted each year). The total average unit cost to prepare a petition is estimated to be $7,939.

6(c) Estimating Agency Burden and Cost

This section estimates the burden and costs to EPA to process Form R reports based on information characterizing the resources used in previous years. Burden and costs are incurred by EPA for five categories of activities: data processing, outreach and training, information dissemination, policy and petitions, and compliance and enforcement. These activities are described in detail in Table 8.

Table 8
EPA Activities for Form R

Category	Description
Data Processing	Data entry – entering the information into the database, microfilming or microfiching the reports, and filing all reports; Data quality – reviewing reports for completeness, errors, and inconsistencies; making inquiries to resolve discrepancies; and reentering corrected data; Magnetic media support – distributing computer program for electronic submissions; creation and updating of intelligent reporting software; Programming and operating the EPA mainframe and local area network; Data analysis – developing tools to use TRI data, analyzing data to support EPA needs, and preparing data for use by others; and EPCRA Reporting Center fixed costs – rent and form storage.
Outreach and Training	Providing EPCRA technical hotline, technical guidance, industry outreach, and regional, state, and public training; and Responding to requests for information through TRI User Support.
Information Dissemination	Public data release, Internet, data access tools.
Policy and Petitions	Analysis to support petitions, list revisions, trade secret claims, and rulemakings.
Compliance and Enforcement	Technical assistance, compliance outreach, facility inspections, issuance of cases and creation of Supplemental Environmental Projects (SEPs).

To estimate EPA burden and cost, EPA employees (as measured by full time equivalents, or FTEs) and extramural costs are separated into a fixed component and a variable component. Activities and expenses that are not greatly affected by marginal changes in numbers of reports are treated as fixed. These include rent for the EPCRA reporting center, development costs for data access tools, compliance assistance measures, and other activities and expenses. The variable component is the amount that varies depending on the number of forms. The variable component reflects total extramural data processing costs divided by the total number of reports processed in the 2000 reporting year. $7.35 million in fixed costs and 31.3 FTEs are required to conduct the EPA activities described above plus an additional $27.50 in variable costs for each form processed.

As discussed in the following section, a total of 88,117 Form R reports are expected to be filed per year. Thus, the total annual burden to EPA is estimated to be $2.4 million in variable costs, along with the $7.35 million in fixed costs and 31.3 FTEs (or 65,104 hours at $3.1 million in loaded labor costs). The analysis assumes that half of the fixed FTE requirement is met by EPA employees at the general pay scale grade GS-12, step 5 (at a loaded salary of $90,590) and half by employees at grade GS-13, step 5 (at a loaded salary of $107,726), using a standard loading factor of 1.6.

6(d) Bottom Line Burden Hours and Costs

Estimated Total Annual Burden for All Respondents

This section presents the total annual burden hours for all respondents including both those complying with Section 313 and submitting petitions. The total burden hours for all respondents to comply with Section 313 is estimated by multiplying the unit burden estimate for each compliance activity by the relevant units: facilities or reports. It is estimated that 201,785 facilities must determine compliance each year, of which 24,308 facilities are expected to also perform the report completion and recordkeeping activities for 88,117 Form Rs.[12] As a result, 177,477 facilities are estimated to complete only the compliance determination procedure. An additional 24,308 facilities are expected to complete compliance determination, form completion and recordkeeping, and of these, 3,734 facilities are expected to also conduct supplier notification. Of the 24,308 facilities that file Form Rs, it is expected that 1,142 facilities will be reporting to TRI for the first-time as they exceed applicable thresholds, and that these facilities will file 1,762 of the Form Rs.[13] Table 9 presents the total annual burden hours based on these estimates.

[12] The Bureau of Census's *County Business Patterns - 1997* indicates that there are 191,745 facilities with 10 or more employees in SIC codes 20 to 39. There are an additional 10,040 facilities in the seven non-manufacturing industries that are estimated to perform compliance determination, for a total of 201,785 facilities performing compliance determination. For the 2000 reporting year, 20,669 facilities submitted 78,304 Form Rs. For the rule lowering reporting thresholds for lead and lead compounds, EPA predicted that there would be 3,639 new facilities and 6,174 current facilities submitting a total of 9,813 additional reports for reporting year 2001. Thus, there are estimated to be a total of up to 24,308 facilities submitting up to 88,117 Form Rs during each of the three years of this ICR.

[13] Since 1994, there have been three reporting years with no major programmatic changes. Based on reporting for 1996, 1997, and 1999, the average rate of facilities that file using new TRIFIDs is 4.7%. These facilities filed an average of 2% of the Form Rs. For the purposes of this ICR, these facilities represent "first-time filers."

Table 9
Total Annual Burden Hour Estimate For Form R

ACTIVITY	Hours	Number of Facilities	Number of Reports	Total Burden
Compliance Determination - all facilities	4	201,785	N/A	807,140
Rule Familiarization - first-time filers	34.5	1,142	N/A	39,399
Form R Completion - reports from first-time filers	69	N/A	1,762	121,578
Form R Completion - reports from subsequent year filers	14.5	N/A	86,355	1,252,148
Recordkeeping/Submission - all reports	5	N/A	88,117	440,585
Supplier Notification	24	3,734	N/A	89,616
Total				**2,750,466**

In an effort to reduce reporting burden, EPA has developed intelligent software for the desktop computer called TRI–Made Easy (TRI-ME) to assist facilities in determining and completing their reporting obligations. Over the three years of the ICR period, EPA expects adoption rates of TRI-ME to increase rapidly. For the purposes of this ICR, EPA uses an annualized estimate of 60 percent of reports being filed using TRI-ME. Note that 73 percent of responses were received electronically for the 1999 reporting year. For the 2000 reporting year, this percentage increased to 79 percent. EPA expects to attain similar adoption rates for TRI-ME by the end of the ICR renewal period.

Based on responses from facilities that tested TRI-ME in Reporting Year 2000, EPA expects that TRI-ME will result in a burden reduction of 25 percent in the activities of Form R Completion and Recordkeeping/Submission.[14] The total estimated annual burden reduction attributable to TRI-ME is shown in Table 10.

[14] USEPA/OEI, *Estimates of Burden Hours for Economic Analyses of the Toxics Release Inventory*, June 10, 2002.

Table 10
Annual TRI-ME Burden Reduction for Form R

	Hours Saved per Form	Number of Affected Forms	Burden Reduction
Form R Completion - reports from first-time filers	(18.5)	1,057	(19,555)
Form R Completion - reports from subsequent year filers	(4.9)	51,813	(253,884)
Total			**(273,439)**

The annual hours burden for all petitions is calculated by multiplying the per-petition burden estimate for each activity by the expected number of petitions per year. A total of 5 petitions are estimated to be filed annually. Table 11 presents the total annual hours burden for all petitions. The total annual hours burden for all petitions submitted is expected to be 925 hours.

Table 11
Total Annual Burden Hour Estimate For All Petitions (5 petitions per year)

Activity	Annual Hours Burden			
	Management	Technical	Clerical	Total Hours
1. Read EPA Policy and Guidance	20	0	0	20
2. Plan Activities	10	5	0	15
3. Prepare Literature Search	10	35	0	45
4. Conduct Literature Search	0	240	0	240
5. Process, Review, and Focus Information	60	370	0	430
6. Write Petition	20	40	30	90
7. Review and Edit petition	20	40	10	70
8. Submit to EPA and File	0	0	15	15
Total Annual Hours Burden	**140**	**730**	**55**	**925**

Estimated Total Annual Cost for All Respondents

The total annual reporting cost for all respondent facilities is determined by multiplying the unit cost estimates by the relevant units (facilities or reports) for each compliance activity. Table 12 presents the annual reporting cost for Form R before accounting for TRI-ME burden reduction.

Table 12

Total Annual Cost Estimate For Form R

ACTIVITY	Cost	Number of Facilities	Number of Reports	Total Cost
Compliance Determination - all facilities	$180	201,785	N/A	$36,321,300
Rule Familiarization - first-time filers	$1,587	1,142	N/A	$1,812,354
Form R Completion - reports from first-time filers	$3,086	N/A	1,762	$5,437,532
Form R Completion - reports from subsequent year filers	$648	N/A	86,355	$55,958,040
Recordkeeping/Submission - all reports	$193	N/A	88,117	$17,006,581
Supplier Notification	$691	3,734	N/A	$2,580,194
Annual Total				**$119,116,001**

As a result of the adoption of TRI-ME, EPA expects reductions in total annual costs attributable to Form R reporting. Using the adoption rate and burden reduction percentages discussed above, EPA predicts reductions in total annual costs as shown in Table 13.

Table 13
Annual TRI-ME Cost Reduction for Form R

	Cost Reduction per Form	Number of Affected Forms	Cost Reduction
Form R Completion - reports from first-time filers	($819.75)	1,057	($866,476)
Form R Completion - reports from subsequent year filers	($210.25)	51,813	($10,893,683)
Total			**($11,760,159)**

The annual cost for all petitions is calculated by multiplying the per-petition cost for each activity by the expected number of petitions per year. A total of 5 petitions are assumed to be filed annually. The total annual cost for all petitions submitted is shown in Table 14.

Table 14

Total Annual Cost Estimate for All Petitions

Activity	Management	Technical	Clerical	Total Cost
1. Read EPA Policy and Guidance	$1,050	$0	$0	$1,050
2. Plan Activities	$525	$215	$0	$740
3. Prepare Literature Search	$525	$1,490	$0	$2,015
4. Conduct Literature Search	$0	$10,215	$0	$10,215
5. Process, Review, and Focus Information	$3,145	$15,750	$0	$18,895
6. Write Petition	$1,050	$1,705	$695	$3,450
7. Review and Edit petition	$1,050	$1,705	$230	$2,985
8. Submit to EPA and File	$0	$0	$345	$345
Total Cost per Petition	**$7,345**	**$31,080**	**$1,270**	**$39,695**

The previous tables have detailed the total burden and cost for complying with Section 313 and for submitting a petition independently. Table 15 presents the total burden and cost for both activities, as well as for the reduction in cost and burden attributable to TRI-ME.

Table 15
Total Annual Respondent Burden and Cost

Activity	Annual Burden Hours	Annual Costs (millions of 2002 dollars)
Form Rs	2,750,466	$119.12
TRI-ME	(273,439)	($11.76)
Petitions	925	$0.04
Total	**2,477,952**	**$107.4**

6(e) Reasons for Change in Burden

As a result of OMB's March 7, 2002 approval of an information correction worksheet, OMB's inventory reflects 145,972 responses and 9,612,104 hours for this information collection. This ICR supporting statement is for 88,117 responses and 2,477,952 hours. The reduction in burden of approximately 7.1 million hours is the result of five adjustments.

The first adjustment is to the number of responses. The estimate of 145,972 responses in the existing OMB approval incorporated predicted reporting increases from economic analyses for several final rules. In all cases, these predictions have overestimated actual reporting levels, resulting in a cumulative overestimate of the number of responses. For example, the 1997 program change for industry expansion estimated 39,033 responses would be submitted, but only 12,567 responses were actually submitted. Likewise, the 1999 program change for PBT chemical

thresholds estimated 19,990 responses would be submitted, but only about 6,600 responses per year were actually submitted. The number of responses in this ICR supporting statement have been adjusted to accurately reflect actual subsequent year reporting levels, with the exception of predicted additional responses from the rule lowering reporting thresholds for lead and lead compounds. The prediction of 9,813 additional reports for lead and lead compounds may prove to be an overestimate, as with EPA predictions for past rules. Adjusting the number of responses to accurately reflect actual subsequent year reporting levels (where available) results in a decrease of 59,617 responses from subsequent year filers and approximately 3.1 million burden hours (at 52.1 hours per response).

The second adjustment is to the unit burden hours. EPA has adjusted the estimate of unit burden hours for Form R completion in subsequent years from 47.1 hours to 14.5 hours based on responses from actual TRI reporting facilities. The adjustment to unit burden hours does not affect the number of responses, but reduces total burden by approximately 2.8 million burden hours (using the number of subsequent year responses for this ICR).

The third adjustment relates to first-year reporting burden. In previous ICRs, the renewal period has coincided with programmatic changes in one or more years. Previous ICRs have been based on annualized estimates of burden (including time for rule familiarization and higher first year reporting burdens for facilities affected by programmatic changes). Since there are no final rules pending at this time, this ICR renewal does not require annualized burden estimates that account for first-year reporting burden by facilities affected by programmatic changes. However, the ICR does account for a baseline level of first-time filers that are new to TRI reporting each year. This accounts for a reduction of about 900,000 burden hours.

The fourth adjustment relates to the adoption of TRI-ME, an automated reporting software package. EPA has reduced the burden estimates related to Form R Completion and Recordkeeping/Submission by 25 percent for the reports filed using TRI-ME. On an annualized basis, an estimated 60 percent of reports are expected to be filed using TRI-ME over the three years of the ICR. This results in a reduction of approximately 270,000 hours.

The fifth adjustment relates to the number of petitions. In previous ICRs, EPA has estimated 11 petitions per year. Since the actual number has been 1 to 2 per year, this ICR renewal has reduced the expected number of petitions to 5. This adjustment has a very minor impact on total burden.

The sum of these adjustments is a decrease of 57,855 responses and 7,134,152 burden hours from the current approved total. Table 16 summarizes the major program changes and adjustments that have been made over the last several years, as well as the changes due to the adjustments in this ICR supporting statement.

Table 16
Recent Changes in TRI Form R Burden

Activity - Explanation	**TRI Form R ICR (EPA # 1363, OMB #2070-0093)**			
	Change		Total	
	# Responses	Burden Hours	Total Responses	Total Burden Hours
1997 Baseline	—	—	90,362	5,538,727
1997 Program Change - Industry Expansion: This rule added 7 new industries to the list of industries subject to TRI reporting beginning in RY98.	39,033	2,467,463	129,395	8,006,190
1999 Adjustment - Form R Correction Worksheet: This adjustment revised the number of responses to be more consistent with actual reporting levels. However, it did not correct for overestimation of expected reporting from the Industry Expansion rule.	(13,226)	(665,666)	116,169	7,340,524
1999 Program Change - PBT Rule: This rule lowered reporting thresholds for certain PBT chemicals, and added other PBT chemicals at lower thresholds beginning in RY00.	19,990	1,485,411	136,159	8,825,935
2000 Program Change - Lead Rule: This rule lowered reporting thresholds for lead and lead compounds beginning in RY01.	9,813	786,169	145,972	9,612,104
2003 Form R ICR Renewal for RY02-04: This request incorporates accounting adjustments to more accurately reflect reporting burden and actual number of responses. This number may be revised during the ICR period to reflect actual reporting on lead and lead compounds at lower reporting thresholds.	(57,855)	(7,134,152)	88,117	2,477,952
CURRENT TOTALS	**88,117**	**2,477,952**	**—**	**—**

6(f) Burden Statement (To appear on Collection Instrument)

The annual public burden related to the Form R, which is approved under OMB Control No. 2070-0093, is estimated to average 19.5 hours per response.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

To comment on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques, EPA has established a public docket for this ICR under Docket ID No. OEI-2002-0003, which is available for public viewing at the OEI Docket in the EPA Docket Center (EPA/DC), EPA West, Room B102, 1301 Constitution Ave., NW, Washington, DC. The EPA Docket Center Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Reading Room is (202) 566-1744, and the telephone number for the OEI Docket is (202) 566-1752. An electronic version of the public docket is available through EPA Dockets (EDOCKET) at http://www.epa.gov/edocket. Use EDOCKET to submit or view public comments, access the index listing of the contents of the public docket, and to access those documents in the public docket that are available electronically. Once in the system, select “search,” then key in the docket ID number identified above. Also, you can send comments to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW, Washington, DC 20503, Attention: Desk Office for EPA. Please include the EPA Docket ID No. OEI- 2002-0003 and OMB control number 2070-0093 in any correspondence.

The completed forms should be submitted in accordance with the instructions accompanying the form, or as specified in the corresponding regulation.

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November, 2002

ATTACHMENT A

Toxic Chemical Release Inventory Reporting Forms and Instructions
***Revised 2000 Version* (EPA 745-B-01-001)**

(Note: An electronic copy of this attachment is not available. Please contact the Environmental Protection Agency at the address noted in the Federal Register notice for a complete copy of this ICR.)

November, 2002

ATTACHMENT B
TRI CHEMICALS REPORTED TO NON-TRI DATABASES

The first two tables in this attachment compare chemical coverage between TRI and three media-specific databases: AFS (AIRS Facility Subsystem), RCRAInfo (Biennial Reporting System), and PCS (Permit Compliance System). These three databases were chosen for analysis because they contain media-specific chemical release information. The third attachment discusses the accessibility of the data in each of these sources.

The chemicals currently in TRI are listed in Attachment B-1, while the TRI chemical categories are listed in Attachment B-2. For each TRI chemical or category, there is a table entry which contains its name as listed in TRI, its CAS number or TRI-assigned category number, and indicators as to whether or not that particular TRI chemical is tracked by AFS, RCRAInfo, and/or PCS. A dot in the AFS, RCRAInfo, or PCS columns indicates that the chemical listed at that row is either tracked by that database or is speciable using data from that database. While a dot means that the particular chemical is tracked by both TRI and the database in question, it does not necessarily mean that a facility releasing the chemical reports that specific chemical to both systems. In other words, the same facility may not be reporting the same information to different programs. Therefore, the indication that a chemical is tracked in both systems does not mean the information contained in the systems is equivalent.

AFS matches are based on emissions data "speciated" from limited industry profiles, and are not derived from directly reported data. Speciated chemical emissions are estimated using SPECIATE and are based on actual reported PM-10 and VOC emissions. Please see section 5(a) of this supporting statement for a description of SPECIATE.

Because data categorized by RCRAInfo waste codes can be only partially translated into chemical-specific information, chemicals have been tagged in the table as reporting to RCRAInfo only where there is CAS-specific data that can be matched. Other wastestreams may contain additional TRI chemicals, but because their waste codes are not CAS-specific, it is difficult to determine which chemicals (as well as how much of them) are actually in the wastestream.

PCS chemicals are tagged in the table if at least one PCS facility reports the chemical as part of its Discharge Monitoring Report (DMR). Therefore, because a chemical is tagged does not necessarily mean that it is significantly represented in PCS. In addition, because the list of chemicals a facility reports depends heavily on the language of the permit, facilities releasing identical chemicals may not be required to report the same set of chemicals to PCS.

Attachment B-1

TRI Listed Chemicals Directly Reporting to AFS, RCRAInfo, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**RCRA Info**	**PCS**
1,1,1,2-Tetrachloro-2-fluoroethane (HCFC-121a)	354110			
1,1,1,2-Tetrachloroethane	630206		●	
1,1,1-Trichloroethane	71556	●	●	●
1,1,2,2-Tetrachloro-1-fluoroethane (HCFC-121)	354143			
1,1,2,2-Tetrachloroethane	79345		●	●
1,1,2-Trichloroethane	79005	●	●	●
1,1-Dichloro-1,2,2,3,3-pentafluoropropane (HCFC-225cc)	13474889			
1,1-Dichloro-1,2,2-trifluoroethane (HCFC-123b)	812044			
1,1-Dichloro-1,2,3,3,3-pentafluoropropane (HCFC-225eb)	111512562			
1,1-Dichloro-1-fluoroethane (HCFC-141b)	1717006			
1,1-Dimethyl hydrazine	57147		●	
1,2,3-Trichloropropane	96184			
1,2,4-Trichlorobenzene	120821			●
1,2,4-Trimethylbenzene	95636	●		●
1,2-Butylene oxide	106887			
1,2-Dibromo-3-chloropropane	96128		●	
1,2-Dibromoethane	106934	●	●	●
1,2-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225bb)	422446			
1,2-Dichloro-1,1,2-trifluoroethane (HCFC-123a)	354234			
1,2-Dichloro-1,1,3,3,3-pentafluoropropane (HCFC-225da)	431867			
1,2-Dichloro-1,1-difluoroethane (HCFC-132b)	1649087			
1,2-Dichlorobenzene	95501	●	●	●
1,2-Dichloroethane	107062	●	●	●
1,2-Dichloroethylene	540590			
1,2-Dichloropropane	78875		●	●
1,2-Diphenylhydrazine	122667		●	●
1,2-Phenylenediamine	95545			
1,2-Phenylenediamine dihydrochloride	615281			
1,3-Butadiene	106990	●		

TRI Listed Chemicals Directly Reporting to AFS, RCRAInfo, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**RCRA Info**	**PCS**
1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)	507551			
1,3-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225ea)	136013791			
1,3-Dichlorobenzene	541731	●	●	●
1,3-Dichloropropylene	542756		●	●
1,3-Phenylenediamine	108452			
1,4-Dichloro-2-butene	764410		●	●
1,4-Dichlorobenzene	106467	●	●	●
1,4-Dioxane	123911		●	●
1,4-Phenylenediamine dihydrochloride	624180			
1-(3-Chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride	4080313			
1-Amino-2-methylanthraquinone	82280			
1-Bromo-1-(bromomethyl)-1,3-propanedicarbonitrile	35691657			
1-Chloro-1,1,2,2-tetrafluoroethane (HCFC-124a)	354256			
1-Chloro-1,1-difluoroethane (HCFC-142b)	75683			
2,2-Dibromo-3-nitrilopropionamide	10222012			
2,2-Dichloro-1,1,1,3,3-pentafluoropropane (HCFC-225aa)	128903219			
2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123)	306832			
2,3,5-Trimethylphenyl methylcarbamate	2655154			
2,3-Dichloro-1,1,1,2,3-pentafluoropropane (HCFC-225ba)	422480			
2,3-Dichloropropene	78886			
2,4,5-Trichlorophenol	95954			●
2,4,6-Trichlorophenol	88062			●
2,4-D	94757		●	●
2,4-D 2-ethyl-4-methylpentyl ester	53404378			
2,4-D 2-ethylhexyl ester	1928434			
2,4-D butoxyethyl ester	1929733			
2,4-D butyl ester	94804			
2,4-D chlorocrotyl ester	2971382			
2,4-D isopropyl ester	94111			
2,4-D propylene glycol butyl ether ester	1320189			
2,4-D sodium salt	2702729			
2,4-DB	94826			

TRI Listed Chemicals Directly Reporting to AFS, RCRAInfo, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**RCRA Info**	**PCS**
2,4-Diaminoanisole	615054			
2,4-Diaminoanisole sulfate	39156417			
2,4-Diaminotoluene	95807			●
2,4-Dichlorophenol	120832		●	●
2,4-Dimethylphenol	105679		●	●
2,4-Dinitrophenol	51285		●	●
2,4-Dinitrotoluene	121142		●	●
2,4-Dithiobiuret	541537		●	
2,4-DP (Dichlorprop)	120365			●
2,6-Dimethylphenol	576261			
2,6-Dinitrotoluene	606202		●	●
2,6-Xylidine	87627			
2-Acetylaminofluorene	53963		●	
2-Aminoanthraquinone	117793			
2-Bromo-2-nitropropane-1,3-diol (Bronopol)	52517			
2-Chloro-1,1,1,2-tetrafluoroethane (HCFC-124)	2837890			
2-Chloro-1,1,1-trifluoroethane (HCFC-133a)	75887			
2-Chloroacetophenone	532274			
2-Ethoxyethanol	110805	●	●	
2-Mercaptobenzothiazole (MBT)	149304			
2-Methoxyethanol	109864	●		
2-Methyllactonitrile	75865		●	
2-Methylpyridine	109068		●	
2-Nitrophenol	88755			●
2-Nitropropane	79469		●	
2-Phenylphenol	90437	●		
3,3'-Dichlorobenzidine	91941		●	●
3,3'-Dichlorobenzidine dihydrochloride	612839			
3,3'-Dichlorobenzidine sulfate	64969342			
3,3'-Dimethoxybenzidene dihydrochloride (o-Dianisidine dihyd	20325400			
3,3'-Dimethoxybenzidine	119904		●	

TRI Listed Chemicals Directly Reporting to AFS, RCRAInfo, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**RCRA Info**	**PCS**
3,3'-Dimethoxybenzidine hydrochloride (o-Dianisidine hydroch	111984099			
3,3'-Dimethylbenzidine	119937		●	
3,3'-Dimethylbenzidine dihydrochloride (o-Tolidine dihydroch	612828			
3,3'-Dimethylbenzidine dihydrofluoride (o-Tolidine dihydrofl	41766750			
3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)	422560			
3,4-Dichloropentafluoropropane	127564925			
3-Chloro-1,1,1-trifluoropropane (HCFC-253fb)	460355			
3-Chloro-2-methyl-1-propene	563473			
3-Chloropropionitrile	542767		●	
3-Iodo-2-propynyl butylcarbamate	55406536			
4,4'-Diaminodiphenyl ether	101804			
4,4'-Isopropylidenediphenol	80057			●
4,4'-Methylenebis(2-chloroaniline)	101144		●	
4,4'-Methylenebis(N,N-dimethyl)benzenamine	101611			
4,4'-Methylenedianiline	101779	●		
4,4'-Thiodianiline	139651			
4,6-Dinitro-o-cresol	534521		●	●
4-Aminoazobenzene	60093			
4-Aminobiphenyl	92671			
4-Dimethylaminoazobenzene	60117		●	
4-Nitrobiphenyl	92933			
4-Nitrophenol	100027		●	●
5-Nitro-o-anisidine	99592			
5-Nitro-o-toluidine	99558		●	
Abamectin	71751412			
Acephate	30560191			
Acetaldehyde	75070	●	●	
Acetamide	60355			
Acetonitrile	75058		●	●
Acetophenone	98862		●	●

TRI Listed Chemicals Directly Reporting to AFS, RCRAInfo, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**RCRA Info**	**PCS**
Acifluorfen sodium salt	62476599			
Acrolein	107028	●	●	●
Acrylamide	79061		●	
Acrylic acid	79107	●	●	
Acrylonitrile	107131	●	●	●
Alachlor	15972608			●
Aldicarb	116063		●	●
Aldrin	309002		●	●
Allyl alcohol	107186		●	
Allyl chloride	107051			●
Allylamine	107119			
alpha-Hexachlorocyclohexane	319846			●
alpha-Naphthylamine	134327		●	
Aluminum (fume or dust)	7429905	●		●
Aluminum oxide (fibrous forms)	1344281			
Aluminum phosphide	20859738		●	
Ametryn	834128			
Amitraz	33089611			
Amitrole	61825		●	
Ammonia	7664417	●		●
Anilazine	101053			
Aniline	62533	●	●	●
Anthracene	120127	●		●
Antimony	7440360	●		●
Arsenic	7440382	●		●
Asbestos (friable)	1332214			●
Atrazine	1912249			
Barium	7440393	●		●
Bendiocarb	22781233			
Benfluralin	1861401			
Benomyl	17804352			
Benzal chloride	98873		●	

TRI Listed Chemicals Directly Reporting to AFS, RCRAInfo, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**RCRA Info**	**PCS**
Benzamide	55210			
Benzene	71432	●	●	●
Benzidine	92875		●	●
Benzoic trichloride	98077		●	
Benzoyl chloride	98884			
Benzoyl peroxide	94360			
Benzyl chloride	100447	●	●	
Beryllium	7440417	●	●	●
beta-Naphthylamine	91598		●	
beta-Propiolactone	57578			
Bifenthrin	82657043			
Biphenyl	92524	●		
Bis(2-chloro-1-methylethyl)ether	108601		●	●
Bis(2-chloroethoxy) methane	111911		●	●
Bis(2-chloroethyl) ether	111444		●	●
Bis(chloromethyl) ether	542881		●	●
Bis(tributyltin) oxide	56359			
Boron trichloride	10294345			
Boron trifluoride	7637072			
Bromacil	314409			
Bromacil lithium salt	53404196			
Bromine	7726956	●		
Bromochlorodifluoromethane {Halon 1211}	353593			
Bromoform	75252		●	●
Bromomethane	74839		●	●
Bromotrifluoromethane {Halon 1301}	75638			
Bromoxynil	1689845			
Bromoxynil octanoate	1689992			
Brucine	357573		●	
Butyl acrylate	141322	●		
Butyraldehyde	123728	●		
C.I. Acid Green 3	4680788			

TRI Listed Chemicals Directly Reporting to AFS, RCRAInfo, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**RCRA Info**	**PCS**
C.I. Acid Red 114	6459945			
C.I. Basic Green 4	569642			
C.I. Basic Red 1	989388			
C.I. Direct Black 38	1937377			
C.I. Direct Blue 218	28407376			
C.I. Direct Blue 6	2602462			
C.I. Direct Brown 95	16071866			
C.I. Disperse Yellow 3	2832408			
C.I. Food Red 15	81889			
C.I. Food Red 5	3761533			
C.I. Solvent Orange 7	3118976			
C.I. Solvent Yellow 14	842079			
C.I. Solvent Yellow 3	97563			
C.I. Solvent Yellow 34	492808		●	
C.I. Vat Yellow 4	128665			
Cadmium	7440439	●		●
Calcium cyanamide	156627			
Captan	133062			
Carbaryl	63252			
Carbofuran	1563662			●
Carbon disulfide	75150	●	●	●
Carbon tetrachloride	56235	●	●	●
Carbonyl sulfide	463581			
Carboxin	5234684			
Catechol	120809			
Chinomethionat	2439012			
Chloramben	133904			
Chlordane	57749		●	●
Chlorendic acid	115286			●
Chlorimuron ethyl	90982324			
Chlorine	7782505	●		●
Chlorine dioxide	10049044			

TRI Listed Chemicals Directly Reporting to AFS, RCRAInfo, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**RCRA Info**	**PCS**
Chloroacetic acid	79118			
Chlorobenzene	108907	●	●	●
Chlorobenzilate	510156			
Chlorodifluoromethane (HCFC-22)	75456	●		●
Chloroethane	75003	●		●
Chloroform	67663	●	●	●
Chloromethane	74873	●	●	●
Chloromethyl methyl ether	107302		●	
Chloropicrin	76062			
Chloroprene	126998	●		
Chlorotetrafluoroethane	63938103			
Chlorothalonil	1897456			●
Chlorotrifluoromethane (CFC-13)	75729	●		
Chlorpyrifos methyl	5598130			
Chlorsulfuron	64902723			
Chromium	7440473	●		●
Cobalt	7440484	●		●
Copper	7440508	●		●
Creosote	8001589	●	●	
Cresol (mixed isomers)	1319773	●	●	●
Crotonaldehyde	4170303		●	
Cumene	98828	●	●	●
Cumene hydroperoxide	80159		●	
Cupferron	135206			
Cyanazine	21725462			
Cycloate	1134232			
Cyclohexane	110827	●	●	●
Cyclohexanol	108930			
Cyfluthrin	68359375			
Cyhalothrin	68085858			
d-trans-Allethrin	28057489			
Dazomet	533744			

TRI Listed Chemicals Directly Reporting to AFS, RCRAInfo, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**RCRA Info**	**PCS**
Dazomet sodium salt	53404607			
Decabromodiphenyl oxide	1163195			
Desmedipham	13684565			
Di(2-ethylhexyl) phthalate	117817		●	●
Diallate	2303164		●	
Diaminotoluene (mixed isomers)	25376458		●	
Diazinon	333415			●
Diazomethane	334883			
Dibenzofuran	132649			
Dibromotetrafluoroethane {Halon 2402}	124732			
Dibutyl phthalate	84742	●	●	●
Dicamba (3,6-Dichloro-2-methyoxybenzoic acid)	1918009			
Dichloran (2,6-Dichloro-4-nitroaniline)	99309			
Dichloro-1,1,2-trifluoroethane	90454185			
Dichlorobenzene (mixed isomers)	25321226			●
Dichlorobromomethane	75274			●
Dichlorodifluoromethane (CFC-12)	75718	●	●	●
Dichlorofluoromethane (HCFC-21)	75434			
Dichloromethane	75092	●	●	●
Dichlorophene (2,2'-Methylenebis(4-chlorophenol)	97234			
Dichlorotetrafluoroethane (CFC-114)	76142	●		
Dichlorotrifluoroethane	34077877			
Dichlorvos	62737			
Diclofop methyl	51338273			
Dicofol	115322			
Dicyclopentadiene	77736			
Diepoxybutane	1464535			
Diethanolamine	111422			
Diethatyl ethyl	38727558			
Diethyl sulfate	64675			
Diflubenzuron	35367385			
Diglycidyl resorcinol ether	101906			

TRI Listed Chemicals Directly Reporting to AFS, RCRAInfo, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**RCRA Info**	**PCS**
Dihydrosafrole	94586			
Dimethipin	55290647			
Dimethoate	60515		●	
Dimethyl chlorothiophosphate	2524030			
Dimethyl phthalate	131113	●	●	●
Dimethyl sulfate	77781		●	
Dimethylamine	124403		●	
Dimethylamine dicamba	2300665			
Dimethylcarbamyl chloride	79447		●	
Dimethyldichlorosilane	75785			
Dinitrobutyl phenol (Dinoseb)	88857		●	●
Dinitrotoluene (mixed isomers)	25321146			
Dinocap	39300453			
Diphenamid	957517			
Diphenylamine	122394			
Dipotassium endothall	2164070			
Dipropyl isocinchomeronate	136458			
Disodium cyanodithioimidocarbonate	138932			
Diuron	330541			
Dodine (Dodecylguanidine monoacetate)	2439103			
Epichlorohydrin	106898	●	●	●
Ethoprop	13194484			
Ethyl acrylate	140885	●	●	
Ethyl chloroformate	541413			
Ethyl dipropylthiocarbamate (EPTC)	759944			
Ethylbenzene	100414	●		●
Ethylene	74851	●		
Ethylene glycol	107211	●		●
Ethylene oxide	75218	●	●	
Ethylene thiourea	96457		●	
Ethyleneimine	151564		●	
Ethylidene dichloride	75343		●	●

TRI Listed Chemicals Directly Reporting to AFS, RCRAInfo, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**RCRA Info**	**PCS**
Famphur	52857		●	
Fenarimol	60168889			
Fenbutatin oxide	13356086			
Fenoxaprop ethyl	66441234			
Fenoxycarb	72490018			
Fenpropathrin	39515418			
Fenthion	55389			
Fenvalerate	51630581			
Ferbam	14484641			
Fluazifop butyl	69806504			
Fluometuron	2164172			
Fluorine	7782414	●	●	
Fluorouracil (5-Fluorouracil)	51218			
Fluvalinate	69409945			
Folpet	133073			
Fomesafen	72178020			
Formaldehyde	50000	●	●	●
Formic acid	64186	●	●	
Freon 113	76131	●		●
Heptachlor	76448		●	●
Hexachloro-1,3-butadiene	87683		●	●
Hexachlorobenzene	118741		●	●
Hexachlorocyclopentadiene	77474		●	●
Hexachloroethane	67721		●	●
Hexachloronaphthalene	1335871			
Hexachlorophene	70304		●	
Hexamethylphosphoramide	680319			●
Hexazinone	51235042			
Hydramethylnon	67485294			
Hydrazine	302012		●	●
Hydrazine sulfate	10034932			
Hydrochloric acid	7647010			

TRI Listed Chemicals Directly Reporting to AFS, RCRAInfo, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**RCRA Info**	**PCS**
Hydrogen cyanide	74908		●	
Hydrogen fluoride	7664393		●	
Hydrogen sulfide	7783064	●	●	●
Hydroquinone	123319			●
Imazalil	35554440			
Iron pentacarbonyl	13463406			
Isobutyraldehyde	78842	●		
Isodrin	465736		●	
Isofenphos	25311711			
Isopropyl alcohol (manufacturing-strong acid process)	67630	●		●
Isosafrole	120581		●	
Lactofen	77501634			
Lead	7439921	●		●
Lindane	58899		●	●
Linuron	330552			
Lithium carbonate	554132			
m-Cresol	108394			
m-Dinitrobenzene	99650			
m-Xylene	108383	●		
Malathion	121755			●
Maleic anhydride	108316	●	●	
Malononitrile	109773		●	
Maneb	12427382			
Manganese	7439965	●		●
Mecoprop	93652			
Mercury	7439976	●		●
Merphos	150505			
Methacrylonitrile	126987		●	
Metham sodium (Sodium methyldithiocarbamate)	137428			
Methanol	67561	●	●	
Methazole	20354261			
Methiocarb	2032657			

TRI Listed Chemicals Directly Reporting to AFS, RCRAInfo, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**RCRA Info**	**PCS**
Methoxone	94746			
Methoxone sodium salt	3653483			
Methoxychlor	72435		●	●
Methyl acrylate	96333	●		
Methyl chlorocarbonate	79221		●	
Methyl ethyl ketone	78933	●	●	●
Methyl hydrazine	60344		●	
Methyl iodide	74884		●	
Methyl isobutyl ketone	108101	●	●	●
Methyl isocyanate	624839		●	
Methyl isothiocyanate	556616			
Methyl mercaptan	74931		●	
Methyl methacrylate	80626	●	●	●
Methyl parathion	298000		●	
Methyl tert-butyl ether	1634044			
Methylene bromide	74953	●	●	
Methyltrichlorosilane	75796			
Metiram	9006422			●
Metribuzin	21087649			
Mevinphos	7786347			
Michler's ketone	90948			
Molinate	2212671			
Molybdenum trioxide	1313275			
Monochloropentafluoroethane {CFC-115}	76153	●		
Monuron	150685			
Mustard gas	505602			
Myclobutanil	88671890			
N,N-Dimethylaniline	121697			●
N,N-Dimethylformamide	68122	●		
n-Butyl alcohol	71363	●	●	
n-Hexane	110543	●		
N-Methyl-2-pyrrolidone	872504			

TRI Listed Chemicals Directly Reporting to AFS, RCRAInfo, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**RCRA Info**	**PCS**
N-Methylolacrylamide	924425			
N-Nitroso-N-ethylurea	759739		●	
N-Nitroso-N-methylurea	684935		●	
N-Nitrosodi-n-butylamine	924163		●	
N-Nitrosodi-n-propylamine	621647		●	●
N-Nitrosodiethylamine	55185		●	
N-Nitrosodimethylamine	62759		●	●
N-Nitrosodiphenylamine	86306			●
N-Nitrosomethylvinylamine	4549400			
N-Nitrosomorpholine	59892			
N-Nitrosonornicotine	16543558			
N-Nitrosopiperidine	100754			
Nabam	142596			
Naled	300765			
Naphthalene	91203	●	●	●
Nickel	7440020	●		●
Nitrapyrin	1929824			
Nitric acid	7697372			
Nitrilotriacetic acid	139139			
Nitrobenzene	98953	●	●	●
Nitrofen	1836755			
Nitrogen mustard	51752			
Nitroglycerin	55630		●	●
Norflurazon	27314132			
Octachloronaphthalene	2234131			
ortho-Anisidine	90040			
ortho-Anisidine hydrochloride	134292			
ortho-Cresol	95487			
ortho-Dinitrobenzene	528290			
ortho-Toluidine	95534		●	
ortho-Toluidine hydrochloride	636215		●	
ortho-Xylene	95476	●		

TRI Listed Chemicals Directly Reporting to AFS, RCRAInfo, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**RCRA Info**	**PCS**
Oryzalin	19044883			
Osmium tetroxide	20816120		●	
Oxydemeton methyl	301122			
Oxydiazon	19666309			
Oxyfluorfen	42874033			
Ozone	10028156			
p-Anisidine	104949			
p-Chloro-o-toluidine	95692			
p-Chloroaniline	106478		●	
p-Chlorophenyl isocyanate	104121			
p-Cresidine	120718			
p-Cresol	106445			●
p-Dinitrobenzene	100254			
p-Nitroaniline	100016		●	
p-Nitrosodiphenylamine	156105			
p-Phenylenediamine	106503			
p-Xylene	106423	●		
Paraldehyde	123637		●	
Paraquat dichloride	1910425			
Parathion	56382		●	●
Pebulate	1114712			
Pendimethalin	40487421			
Pentachloroethane	76017		●	
Pentachlorophenol	87865			●
Pentobarbital sodium	57330			
Peracetic acid	79210			
Perchloromethyl mercaptan	594423			
Permethrin	52645531			
Phenanthrene	85018	●		●
Phenol	108952	●	●	●
Phenothrin	26002802			
Phenytoin	57410			

TRI Listed Chemicals Directly Reporting to AFS, RCRAInfo, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**RCRA Info**	**PCS**
Phosgene	75445		●	
Phosphine	7803512		●	
Phosphoric acid	7664382			
Phosphorus (yellow or white)	7723140	●		●
Phthalic anhydride	85449	●	●	
Picloram	1918021			
Picric acid	88891			
Piperonyl butoxide	51036			
Pirimiphos methyl	29232937			
Polychlorinated biphenyls	1336363			
Potassium bromate	7758012			
Potassium dimethyldithiocarbamate	128030			
Potassium N-methyldithiocarbamate	137417			
Profenofos	41198087	`		
Prometryn	7287196			
Pronamide	23950585		●	
Propachlor	1918167			●
Propane sultone	1120714		●	
Propanil	709988			
Propargite	2312358			
Propargyl alcohol	107197		●	
Propetamphos	31218834			
Propiconazole	60207901			
Propionaldehyde	123386	●		
Propoxur	114261			
Propylene (Propene)	115071	●		
Propylene oxide	75569	●		
Propyleneimine	75558		●	
Pyridine	110861		●	●
Quinoline	91225			
Quinone	106514		●	
Quintozene	82688		●	

TRI Listed Chemicals Directly Reporting to AFS, RCRAInfo, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**RCRA Info**	**PCS**
Quizalofop-ethyl	76578148			
Resmethrin	10453868			
S,S,S-Tributyltrithiophosphate (DEF)	78488			
Saccharin (manufacturing)	81072		●	
Safrole	94597			
sec-Butyl alcohol	78922	●		
Selenium	7782492	●		●
Sethoxydim	74051802			
Silver	7440224	●		●
Simazine	122349			
Sodium azide	26628228		●	
Sodium dicamba	1982690			
Sodium dimethyldithiocarbamate	128041			
Sodium fluoroacetate	62748		●	
Sodium nitrite	7632000			●
Sodium o-phenylphenoxide	132274			
Sodium pentachlorophenate	131522			
Styrene	100425	●		●
Styrene oxide	96093			
Sulfuric acid	7664939			
Sulfuryl fluoride (Vikane)	2699798			
Sulprofos	35400432			
Tebuthiuron	34014181			
Temephos	3383968			
Terbacil	5902512			
tert-Butyl alcohol	75650	●		
Tetrachloroethylene	127184	●	●	●
Tetrachlorvinphos	961115			
Tetracycline hydrochloride	64755			
Tetramethrin	7696120			
Thallium	7440280			●
Thiabendazole	148798			

TRI Listed Chemicals Directly Reporting to AFS, RCRAInfo, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**RCRA Info**	**PCS**
Thioacetamide	62555		●	
Thiobencarb	28249776			
Thiodicarb	59669260			
Thiophanate ethyl	23564069			
Thiophanate-methyl	23564058			
Thiosemicarbazide	79196		●	
Thiourea	62566		●	
Thiram	137268		●	
Thorium dioxide	1314201			
Titanium tetrachloride	7550450			
Toluene	108883	●	●	●
Toluene-2,4-diisocyanate	584849			
Toluene-2,6-diisocyanate	91087			
Toluenediisocyanate (mixed isomers)	26471625		●	
Toxaphene	8001352		●	●
trans-1,3-Dichloropropene	10061026			●
trans-1,4-Dichloro-2-butene	110576			
Triadimefon	43121433			
Triallate	2303175			
Triaziquone	68768			
Tribenuron methyl	101200480			
Tributyltin fluoride	1983104			
Tributyltin methacrylate	2155706			
Trichlorfon	52686			
Trichloroacetyl chloride	76028			
Trichloroethylene	79016	●	●	●
Trichlorofluoromethane {CFC-11}	75694	●	●	●
Triclopyr triethylammonium salt	57213691			
Triethylamine	121448			
Trifluralin	1582098			
Triforine	26644462			
Trimethylchlorosilane	75774			

TRI Listed Chemicals Directly Reporting to AFS, RCRAInfo, and/or PCS				
Chemical Name	**CAS Number**	**AFS**	**RCRA Info**	**PCS**
Triphenyltin chloride	639587			
Triphenyltin hydroxide	76879			
Tris(2,3-dibromopropyl) phosphate	126727		●	
Trypan blue	72571		●	
Urethane	51796		●	
Vanadium (fume or dust)	7440622	●		●
Vinclozolin	50471448			
Vinyl acetate	108054	●		●
Vinyl bromide	593602			
Vinyl chloride	75014	●	●	●
Vinylidene chloride	75354		●	●
Xylene (mixed isomers)	1330207	●	●	●
Zinc (fume or dust)	7440666	●		●
Zineb	12122677			
Source: *Economic Analysis of the Final Rule to Add Certain Industry Groups to EPCRA Section 313*				

Attachment B-2

TRI Listed Chemical Categories Directly Reporting to AFS, RCRAInfo, and/or PCS				
Chemical Category/Constituent	**CAS Number/TRI Reference**	**AFS**	**RCRAInfo**	**PCS**
Antimony Compounds	N010			
Arsenic Compounds	N020			
Barium Compounds	N040			
Beryllium Compounds	N050			
Cadmium Compounds	N078			
Chlorophenols	N084			
Chromium Compounds	N090			
Cobalt Compounds	N096			
Copper Compounds	N100			
Cyanide Compounds	N106			
Diisocyanates	N120			
1,3-Bis(methylisocyanate)-cyclohexane	38861722			
1,4-Bis(methylisocyanate)-cyclohexane	10347543			
1,4-Cyclohexane diisocyanate	25563671			
Diethyldiisocyanatobenzene	134190377			
4,4'-Diisocyanatodiphenyl ether	41287384			
2,4'-Diisocyanatodiphenyl sulfide	757908732			
3,3'-Dimethoxybenzidine-4,4'-diisocyanate	91930			
3,3'-Dimethyl-4,4'-diphenylene diisocyanate	91974			
3,3'-Dimethyldiphenylmethane-4,4'-diisocyanate	139253			
Hexamethylene-1,6-diisocyanate	822060			
Isophorone diisocyanate	4098719			
4-Methyldiphenylmethane-3,4-diisocyanate	75790840			
1,1-Methylene bis(4-isocyanatocyclohexane)	5124301			
Methylene bis(phenylisocyanate) (MDI)	101688			
1,5-Naphthalene diisocyanate	3173726			
1,3-Phenylene diisocyanate	123615			
1,4-Phenylene diisocyanate	104494			
Polymeric diphenylmethane diisocyanate	9016879			
2,2,4-Trimethylhexamethylene diisocyanate	16938220			

TRI Listed Chemical Categories Directly Reporting to AFS, RCRAInfo, and/or PCS				
Chemical Category/Constituent	**CAS Number/TRI Reference**	**AFS**	**RCRAInfo**	**PCS**
2,4,4-Trimethylhexamethylene diisocyanate	15646965			
Ethylenebisdithiocarbamic acid, salts and esters	N171			
Glycol Ethers	N230			
Lead Compounds	N420			
Manganese Compounds	N450			
Mercury Compounds	N458			
Nickel Compounds	N495			
Nicotine and salts	N503			
Nitrate compounds (water dissociable)	N511			●
Polybrominated Biphenyls (PBBs)	N575			
Polychlorinated alkanes	N583			
Polycyclic aromatic compounds (following chemicals only) *	N590			
Benz(a)anthracene	56553	●	●	●
Benzo(a)phenanthrene	218019		●	●
Benzo(a)pyrene	50328	●	●	●
Benzo(b)fluoranthene	205992	●		●
Benzo(j)fluoranthene	205823			
Benzo(k)fluoranthene	207089	●		●
Benzo(rst)pentaphene	189559		●	
Dibenz(a,h)acridine	226368			
Dibenz(a,j)acridine	224420			
Dibenzo(a,h)anthracene	53703		●	●
Dibenzo(a,e)fluoranthene	5385751			
Dibenzo(a,e)pyrene	192654			
Dibenzo(a,h)pyrene	189640			
Dibenzo(a,l)pyrene	191300			
7H-Dibenzo(c,g)carbazole	194592			
7,12-Dimethylbenz(a)anthracene	57976		●	
Indeno[1,2,3-cd]pyrene	193395			
5-Methylchrysene	3697243	●	●	●
1-Nitropyrene	5522430			

TRI Listed Chemical Categories Directly Reporting to AFS, RCRAInfo, and/or PCS				
Chemical Category/Constituent	**CAS Number/TRI Reference**	**AFS**	**RCRAInfo**	**PCS**
Selenium Compounds	N725			
Silver Compounds	N740			
Strychnine and salts	N746			
Thallium Compounds	N760			
Warfarin and salts	N874			
Zinc Compounds	N982			
Source: Source: *Economic Analysis of the Final Rule to Add Certain Industry Groups to EPCRA Section 313*				

ATTACHMENT C

Emergency Planning and Community Right to Know Act of 1986, Section 313
(42 U.S.C.A. Section 1023)

EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT SECTION 313

UNITED STATES CODE
TITLE 42 - THE PUBLIC HEALTH AND WELFARE
CHAPTER 116 - EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW

SUBCHAPTER I - EMERGENCY PLANNING AND NOTIFICATION

§ 11023. Toxic chemical release forms

(a) Basic requirement

The owner or operator of a facility subject to the requirements of this section shall complete a toxic chemical release form as published under subsection (g) of this section for each toxic chemical listed under subsection (c) of this section that was manufactured, processed, or otherwise used in quantities exceeding the toxic chemical threshold quantity established by subsection (f) of this section during the preceding calendar year at such facility. Such form shall be submitted to the Administrator and to an official or officials of the State designated by the Governor on or before July 1, 1988, and annually thereafter on July 1 and shall contain data reflecting releases during the preceding calendar year.

(b) Covered owners and operators of facilities

(1) In general

(A) The requirements of this section shall apply to owners and operators of facilities that have 10 or more full-time employees and that are in Standard Industrial Classification Codes 20 through 39 (as in effect on July 1, 1985) and that manufactured, processed, or otherwise used a toxic chemical listed under subsection (c) of this section in excess of the quantity of that toxic chemical established under subsection (f) of this section during the calendar year for which a release form is required under this section.
(B) The Administrator may add or delete Standard Industrial Classification Codes for purposes of subparagraph (A), but only to the extent necessary to provide that each Standard Industrial Code to which this section applies is relevant to the purposes of this section.
(C) For purposes of this section -
(i) The term "manufacture" means to produce, prepare, import, or compound a toxic chemical.
(ii) The term "process" means the preparation of a toxic chemical, after its manufacture, for distribution in commerce - (I) in the same form or

physical state as, or in a different form or physical state from, that in which it was received by the person so preparing such chemical, or (II) as part of an article containing the toxic chemical.

(2) Discretionary application to additional facilities

The Administrator, on his own motion or at the request of a Governor of a State (with regard to facilities located in that State), may apply the requirements of this section to the owners and operators of any particular facility that manufactures, processes, or otherwise uses a toxic chemical listed under subsection (c) of this section if the Administrator determines that such action is warranted on the basis of toxicity of the toxic chemical, proximity to other facilities that release the toxic chemical or to population centers, the history of releases of such chemical at such facility, or such other factors as the Administrator deems appropriate.

(c) Toxic chemicals covered

The toxic chemicals subject to the requirements of this section are those chemicals on the list in Committee Print Number 99-169 of the Senate Committee on Environment and Public Works, titled "Toxic Chemicals Subject to Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986" (42 U.S.C. 11023) (including any revised version of the list as may be made pursuant to subsection (d) or (e) of this section).

(d) Revisions by Administrator

(1) In general

The Administrator may by rule add or delete a chemical from the list described in subsection (c) of this section at any time.

(2) Additions

A chemical may be added if the Administrator determines, in his judgment, that there is sufficient evidence to establish any one of the following:

(A) The chemical is known to cause or can reasonably be anticipated to cause significant adverse acute human health effects at concentration levels that are reasonably likely to exist beyond facility site boundaries as a result of continuous, or frequently recurring, releases.

(B) The chemical is known to cause or can reasonably be anticipated to cause in humans -

(i) cancer or teratogenic effects, or

(ii) serious or irreversible - (I) reproductive dysfunctions, (II) neurological disorders, (III) heritable genetic mutations, or (IV) other chronic health effects.

(C) The chemical is known to cause or can reasonably be anticipated to cause, because of -

(i) its toxicity,

(ii) its toxicity and persistence in the environment, or

(iii) its toxicity and tendency to bioaccumulate in the environment, a significant adverse effect on the environment of sufficient seriousness, in the judgment of the Administrator, to warrant reporting under this section. The number of chemicals included on the list described in subsection C of this section on the basis of the preceding sentence may constitute in the aggregate no more than 25 percent of the total number of chemicals on the list. A determination under this paragraph shall be based on generally accepted scientific principles or laboratory tests, or appropriately designed and conducted epidemiological or other population studies, available to the Administrator.

(3) Deletions

A chemical may be deleted if the Administrator determines there is not sufficient evidence to establish any of the criteria described in paragraph (2).

(4) Effective date

Any revision made on or after January 1 and before December 1 of any calendar year shall take effect beginning with the next calendar year. Any revision made on or after December 1 of any calendar year and before January 1 of the next calender year shall take effect beginning with the calendar year following such next calendar year.

(e) Petitions

(1) In general

Any person may petition the Administrator to add or delete a chemical from the list described in subsection (c) of this section on the basis of the criteria in subparagraph (A) or (B) of subsection (d)(2) of this section. Within 180 days after receipt of a petition, the Administrator shall take one of the following actions:

(A) Initiate a rulemaking to add or delete the chemical to the list, in accordance with subsection (d)(2) or (d)(3) of this section.

(B) Publish an explanation of why the petition is denied.

(2) Governor petitions

A State Governor may petition the Administrator to add or delete a chemical from the list described in subsection (c) of this section on the basis of the criteria in subparagraph (A), (B), or (c) of subsection (d)(2) of this section. In the case of such a petition from a State Governor to delete a chemical, the petition shall be treated in the same manner as a petition received under paragraph (1) to delete a chemical. In the case of such a petition from a State Governor to add a chemical, the chemical will be added to the list within 180 days after receipt of the petition, unless the Administrator -

(A) initiates a rulemaking to add the chemical to the list, in accordance with subsection (d)(2) of this section, or

(B) publishes an explanation of why the Administrator believes the petition does not meet the requirements of subsection (d)(2) of this section for adding a chemical to the list.

(f) Threshold for reporting

(1) Toxic chemical threshold amount

The threshold amounts for purposes of reporting toxic chemicals under this section are as follows:

(A) With respect to a toxic chemical used at a facility, 10,000 pounds of the toxic chemical per year.

(B) With respect to a toxic chemical manufactured or processed at a facility -

(i) For the toxic chemical release form required to be submitted under this section on or before July 1, 1988, 75,000 pounds of the toxic chemical per year.

(ii) For the form required to be submitted on or before July 1, 1989, 50,000 pounds of the toxic chemical per year.

(iii) For the form required to be submitted on or before July 1, 1990, and for each form thereafter, 25,000 pounds of the toxic chemical per year.

(2) Revisions

The Administrator may establish a threshold amount for a toxic chemical different from the amount established by paragraph (1). Such revised threshold shall obtain reporting on a substantial majority of total releases of the chemical at all facilities subject to the requirements of this section. The amounts established under this paragraph may, at the Administrator's discretion, be based on classes of chemicals or categories of facilities.

(g) Form

(1) Information required

Not later than June 1, 1987, the Administrator shall publish a uniform toxic chemical release form for facilities covered by this section. If the Administrator does not publish such a form, owners and operators of facilities subject to the requirements of this section shall provide the information required under this subsection by letter postmarked on or before the date on which the form is due. Such form shall -

(A) provide for the name and location of, and principal business activities at, the facility;

(B) include an appropriate certification, signed by a senior official with management responsibility for the person or persons completing the report, regarding the accuracy and completeness of the report; and

(C) provide for submission of each of the following items of information for each listed toxic chemical known to be present at the facility:

(i) Whether the toxic chemical at the facility is manufactured, processed, or otherwise used, and the general category or categories of use of the chemical.

(ii) An estimate of the maximum amounts (in ranges) of the toxic chemical present at the facility at any time during the preceding calendar year.

(iii) For each waste stream, the waste treatment or disposal methods employed, and an estimate of the treatment efficiency typically achieved by such methods for that waste stream.

(iv) The annual quantity of the toxic chemical entering each environmental medium.

(2) Use of available data

In order to provide the information required under this section, the owner or operator of a facility may use readily available data (including monitoring data) collected pursuant to other provisions of law, or, where such data are not readily available, reasonable estimates of the amounts involved. Nothing in this section requires the monitoring or measurement of the quantities, concentration, or frequency of any toxic chemical released into the environment beyond that monitoring and measurement required under other provisions of law or regulation. In order to assure consistency, the Administrator shall require that data be expressed in common units.

(h) Use of release form

The release forms required under this section are intended to provide information to the Federal, State, and local governments and the public, including citizens of

communities surrounding covered facilities. The release form shall be available, consistent with section 11044(a) of this title, to inform persons about releases of toxic chemicals to the environment; to assist governmental agencies, researchers, and other persons in the conduct of research and data gathering; to aid in the development of appropriate regulations, guidelines, and standards; and for other similar purposes.

(I) Modifications in reporting frequency

(1) In general

The Administrator may modify the frequency of submitting a report under this section, but the Administrator may not modify the frequency to be any more often than annually. A modification may apply, either nationally or in a specific geographic area, to the following:

(A) All toxic chemical release forms required under this section.
(B) A class of toxic chemicals or a category of facilities.
(C) A specific toxic chemical.
(D) A specific facility.

(2) Requirements

A modification may be made under paragraph (1) only if the Administrator -

(A) makes a finding that the modification is consistent with the provisions of subsection (h) of this section, based on -

(i) experience from previously submitted toxic chemical release forms, and

(ii) determinations made under paragraph (3), and

(B) the finding is made by a rulemaking in accordance with section 553 of title 5.

(3) Determinations

The Administrator shall make the following determinations with respect to a proposed modification before making a modification under paragraph (1):

(A) The extent to which information relating to the proposed modification provided on the toxic chemical release forms has been used by the Administrator or other agencies of the Federal Government, States, local governments, health professionals, and the public.

(B) The extent to which the information is (i) readily available to potential users from other sources, such as State reporting programs, and (ii) provided to the Administrator under another Federal law or through a State program.

(C) The extent to which the modification would impose additional and unreasonable burdens on facilities subject to the reporting requirements under this section.

(4) 5-year review

Any modification made under this subsection shall be reviewed at least once every 5 years. Such review shall examine the modification and ensure that the requirements of paragraphs (2) and (3) still justify continuation of the modification. Any change to a modification reviewed under this paragraph shall be made in accordance with this subsection.

(5) Notification to Congress

The Administrator shall notify Congress of an intention to initiate a rulemaking for a modification under this subsection. After such notification, the Administrator shall delay initiation of the rulemaking for at least 12 months, but no more than 24 months, after the date of such notification.

(6) Judicial review

In any judicial review of a rulemaking which establishes a modification under this subsection, a court may hold unlawful and set aside agency action, findings, and conclusions found to be unsupported by substantial evidence.

(7) Applicability

A modification under this subsection may apply to a calendar year or other reporting period beginning no earlier than January 1, 1993.

(8) Effective date

Any modification made on or after January 1 and before December 1 of any calendar year shall take effect beginning with the next calendar year. Any modification made on or after December 1 of any calendar year and before January 1 of the next calendar year shall take effect beginning with the calendar year following such next calendar year.

(j) EPA management of data

The Administrator shall establish and maintain in a computer data base a national toxic chemical inventory based on data submitted to the Administrator under this

section. The Administrator shall make these data accessible by computer telecommunication and other means to any person on a cost reimbursable basis.

(k) Report

Not later than June 30, 1991, the Comptroller General, in consultation with the Administrator and appropriate officials in the States, shall submit to the Congress a report including each of the following:

(1) A description of the steps taken by the Administrator and the States to implement the requirements of this section, including steps taken to make information collected under this section available to and accessible by the public.

(2) A description of the extent to which the information collected under this section has been used by the Environmental Protection Agency, other Federal agencies, the States, and the public, and the purposes for which the information has been used.

(3) An identification and evaluation of options for modifications to the requirements of this section for the purpose of making information collected under this section more useful.

(l) Mass balance study

(1) In general

The Administrator shall arrange for a mass balance study to be carried out by the National Academy of Sciences using mass balance information collected by the Administrator under paragraph (3). The Administrator shall submit to Congress a report on such study no later than 5 years after October 17, 1986.

(2) Purposes

The purposes of the study are as follows:

(A) To assess the value of mass balance analysis in determining the accuracy of information on toxic chemical releases.

(B) To assess the value of obtaining mass balance information, or portions thereof, to determine the waste reduction efficiency of different facilities, or categories of facilities, including the effectiveness of toxic chemical regulations promulgated under laws other than this chapter.

(C) To assess the utility of such information for evaluating toxic chemical management practices at facilities, or categories of facilities, covered by this section.

(D) To determine the implications of mass balance information collection on a national scale similar to the mass balance information collection carried out by

the Administrator under paragraph (3), including implications of the use of such collection as part of a national annual quantity toxic chemical release program.

(3) Information collection

(A) The Administrator shall acquire available mass balance information from States which currently conduct (or during the 5 years after October 17, 1986 initiate) a mass balance-oriented annual quantity toxic chemical release program. If information from such States provides an inadequate representation of industry classes and categories to carry out the purposes of the study, the Administrator also may acquire mass balance information necessary for the study from a representative number of facilities in other States.

(B) Any information acquired under this section shall be available to the public, except that upon a showing satisfactory to the Administrator by any person that the information (or a particular part thereof) to which the Administrator or any officer, employee, or representative has access under this section if made public would divulge information entitled to protection under section 1905 of title 18, such information or part shall be considered confidential in accordance with the purposes of that section, except that such information or part may be disclosed to other officers, employees, or authorized representatives of the United States concerned with carrying out this section.

(C) The Administrator may promulgate regulations prescribing procedures for collecting mass balance information under this paragraph.

(D) For purposes of collecting mass balance information under subparagraph (A), the Administrator may require the submission of information by a State or facility.

(4) Mass balance definition

For purposes of this subsection, the term "mass balance" means an accumulation of the annual quantities of chemicals transported to a facility, produced at a facility, consumed at a facility, used at a facility, accumulated at a facility, released from a facility, and transported from a facility as a waste or as a commercial product or byproduct or component of a commercial product or byproduct.

ATTACHMENT D

Pollution Prevention Act
(42 U.S.C.A. Sections 13101-13109)

POLLUTION PREVENTION ACT SECTION 6607
UNITED STATES CODE
TITLE 42 - THE PUBLIC HEALTH AND WELFARE
CHAPTER 133 - POLLUTION PREVENTION

§ 13106. Source reduction and recycling data collection

(a) Reporting requirements

Each owner or operator of a facility required to file an annual toxic chemical release form under section 11023 of this title for any toxic chemical shall include with each such annual filing a toxic chemical source reduction and recycling report for the preceding calendar year. The toxic chemical source reduction and recycling report shall cover each toxic chemical required to be reported in the annual toxic chemical release form filed by the owner or operator under section 11023(c) of this title. This section shall take effect with the annual report filed under section 11023 of this title for the first full calendar year beginning after November 5, 1990.

(b) Items included in report

The toxic chemical source reduction and recycling report required under subsection (a) of this section shall set forth each of the following on a facility-by-facility basis for each toxic chemical:

. (1) The quantity of the chemical entering any waste stream (or otherwise released into the environment) prior to recycling, treatment, or disposal during the calendar year for which the report is filed and the percentage change from the previous year. The quantity reported shall not include any amount reported under paragraph (7). When actual measurements of the quantity of a toxic chemical entering the waste streams are not readily available, reasonable estimates should be made based on best engineering judgment

(2) The amount of the chemical from the facility which is recycled (at the facility or elsewhere) during such calendar year, the percentage change from the previous year, and the process of recycling used.

(3) The source reduction practices used with respect to that chemical during such year at the facility. Such practices shall be reported in accordance with the following categories unless the Administrator finds other categories to be more appropriate.

(A) Equipment, technology, process, or procedure modifications.

(B) Reformulation or redesign of products.

(C) Substitution of raw materials.

(D) Improvement in management, training, inventory control, materials handling, or other general operational phases of industrial facilities.

(4) The amount expected to be reported under paragraph (1) and (2) for the two calendar years immediately following the calendar year for which the report is filed. Such amount shall be expressed as a percentage change from the amount reported in paragraphs (1) and (2).

(5) A ratio of production in the reporting year to production in the previous year. The ratio should be calculated to most closely reflect all activities involving the toxic chemical. In specific industrial classifications subject to this section, where a feedstock or some variable other than production is the primary influence on waste characteristics or volumes, the report may provide an index based on that primary variable for each toxic chemical. The Administrator is encouraged to develop production indexes to accommodate individual industries for use on a voluntary basis.

(6) The techniques which were used to identify source reduction opportunities. Techniques listed should include, but are not limited to, employee recommendations, external and internal audits, participative team management, and material balance audits. Each type of source reduction listed under paragraph (3) should be associated with the techniques or multiples of techniques used to identify the source reduction technique.

(7) The amount of any toxic chemical released into the environment which resulted from a catastrophic event, remedial action, or other one-time event, and is not associated with production processes during the reporting year.

(8) The amount of the chemical from the facility which is treated (at the facility or elsewhere) during such calendar year and the percentage change from the previous year. For the first year of reporting under this subsection, comparison with the previous year is required only to the extent such information is available.

(c) SARA provisions

The provisions of sections 11042, 11045(c), and 11046 of this title shall apply to the reporting requirements of this section in the same manner as to the reports required under section 11023 of this title. The Administrator may modify the form required for purposes of reporting information under section 11023 of this title to the extent he deems necessary to include the additional information required under this section.

(d) Additional optional information

Any person filing a report under this section for any year may include with the report additional information regarding source reduction, recycling, and other pollution control techniques in earlier years.

(e) Availability of data

Subject to section 11042 of this title, the Administrator shall make data collected under this section publicly available in the same manner as the data collected under section 11023 of this title.

November, 2002

ATTACHMENT E

40 CFR Part 372
Toxic Chemical Release Reporting: Community Right-to-Know

TITLE 40--PROTECTION OF ENVIRONMENT

CHAPTER I--ENVIRONMENTAL PROTECTION AGENCY

§ 372.1 Scope and purpose.

This part sets forth requirements for the submission of information relating to the release of toxic chemicals under section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986. The information collected under this part is intended to inform the general public and the communities surrounding covered facilities about releases of toxic chemicals, to assist research, to aid in the development of regulations, guidelines, and standards, and for other purposes. This part also sets forth requirements for suppliers to notify persons to whom they distribute mixtures or trade name products containing toxic chemicals that they contain such chemicals.

§ 372.3 Definitions.

Terms defined in sections 313(b)(1)(c) and 329 of Title III and not explicitly defined herein are used with the meaning given in Title III. For the purpose of this part: Acts means Title III.

Article means a manufactured item: (1) Which is formed to a specific shape or design during manufacture; (2) which has end use functions dependent in whole or in part upon its shape or design during end use; and (3) which does not release a toxic chemical under normal conditions of processing or use of that item at the facility or establishments.

Beneficiation means the preparation of ores to regulate the size (including crushing and grinding) of the product, to remove unwanted constituents, or to improve the quality, purity, or grade of a desired product.

Boiler means an enclosed device using controlled flame combustion and having the following characteristics:

(1)(i) The unit must have physical provisions for recovering and exporting thermal energy in the form of steam, heated fluids, or heated gases; and

§ 372.5 Persons subject to this part.

Owners and operators of facilities described in §§ 372.22 and 372.45 are subject to the requirements of this part. If the owner and operator of a facility are different persons, only one need report under § 372.17 or provide a notice under § 372.45 for each toxic chemical in a mixture or trade name product distributed from the facility. However, if no report is submitted

or notice provided, EPA will hold both the owner and the operator liable under section 325(c) of Title III, except as provided in §§ 372.38(e) and 372.45(g).

§372.10 Recordkeeping.

(a) Each person subject to the reporting requirements of this part must retain the following records for a period of 3 years from the date of the submission of a report under §372.30:

(1) A copy of each report submitted by the person under §372.30.

(2) All supporting materials and documentation used by the person to make the compliance determination that the facility or establishments is a covered facility under §372.22 or §372.45.

(3) Documentation supporting the report submitted under §372.30 including:

(i) Documentation supporting any determination that a claimed allowable exemption under §372.38 applies.

(ii) Data supporting the determination of whether a threshold under §372.25 applies for each toxic chemical.

(iii) Documentation supporting the calculations of the quantity of each toxic chemical released to the environment or transferred to an off-site location.

(iv) Documentation supporting the use indications and quantity on site reporting for each toxic chemical, including dates of manufacturing, processing, or use.

(v) Documentation supporting the basis of estimate used in developing any release or off-site transfer estimates for each toxic chemical.

(vi) Receipts or manifests associated with the transfer of each toxic chemical in waste to off-site locations.

(vii) Documentation supporting reported waste treatment methods, estimates of treatment efficiencies, ranges of influent concentration to such treatment, the sequential nature of treatment steps, if applicable, and the actual operating data, if applicable, to support the waste treatment efficiency estimate for each toxic chemical.

(b) Each person subject to the notification requirements of this part must retain the following records for a period of 3 years from the date of the submission of a notification under §372.45.

(1) All supporting materials and documentation used by the person to determine whether a notice is required under §372.45.

(2) All supporting materials and documentation used in developing each required notice under §372.45 and a copy of each notice.

(c) Records retained under this section must be maintained at the facility to which the report applies or from which a notification was provided. Such records must be readily available for purposes of inspection by EPA.

(d) Each owner or operator who determines that the owner operator may apply the alternate threshold as specified under §372.27(a) must retain the following records for a period of 3 years from the date of the submission of the certification statement as required under §372.27(b):

(1) A copy of each certification statement submitted by the person under §372.27(b).

(2) All supporting materials and documentation used by the person to make the compliance determination that the facility or establishment is eligible to apply the alternate threshold as specified in §372.27.

(3) Documentation supporting the certification statement submitted under §372.27(b) including:

(i) Data supporting the determination of whether the alternate threshold specified under §372.27(a) applies for each toxic chemical.

(ii) Documentation supporting the calculation of annual reportable amount, as defined in §372.27(a), for each toxic chemical, including documentation supporting the calculations and the calculations of each data element combined for the annual reportable amount.

(iii) Receipts or manifests associated with the transfer of each chemical in waste to off-site locations.

§ 372.18 Compliance and enforcement.

Violators of the requirements of this part shall be liable for a civil penalty in an amount not to exceed $25,000 each day for each violation as provided in section 325(c) of Title III.

§ 372.22 Covered facilities for toxic chemical release reporting.

A facility that meets all of the following criteria for a calendar year is a covered facility for that calendar year and must report under § 372.30.

(a) The facility has 10 or more full-time employees.

(b) The facility is in Standard Industrial Classification (SIC) (as in effect on January 1, 1987) major group codes 10 (except 1011, 1081, and 1094), 12 (except 1241), or 20 through 39; industry codes 4911, 4931, or 4939 (limited to facilities that combust coal and/or oil for the purpose of generating power for distribution in commerce); or 4953 (limited to facilities regulated under the Resource Conservation and Recovery Act, subtitle C, 42 U.S.C. section 6921 et seq.), or 5169, or 5171, or 7389 (limited to facilities primarily engaged in solvent recovery services on a contract or fee basis) by virtue of the fact that it meets one of the following criteria:

(1) The facility is an establishment with a primary SIC major group or industry code in the above list.

(2) The facility is a multi-establishment complex where all establishments have primary SIC major group or industry codes in the above list.

(3) The facility is a multi-establishment complex in which one of the following is true:

(i) The sum of the value of services provided and/or products shipped and/or produced from those establishments that have primary SIC major group or industry codes in the above list is greater than 50 percent of the total value of all services provided and/or products shipped from and/or produced by all establishments at the facility.

(ii) One establishment having a primary SIC major group or industry code in the above list contributes more in terms of value of services provided and/or products shipped from and/or produced at the facility than any other establishment within the facility.

(c) The facility manufactured (including imported), processed, or otherwise used a toxic chemical in excess of an applicable threshold quantity of that chemical set forth in § 372.25, § 372.27, or § 372.28.

§ 372.25 Thresholds for reporting.

Except as provided in §§ 372.27 and 372.28, the threshold amounts for purposes of reporting under § 372.30 for toxic chemicals are as follows:

(a) With respect to a toxic chemical manufactured (including imported) or processed at a facility during the following calendar years:

1987 -- 75,000 pounds of the chemical manufactured or processed for the year.

1988 -- 50,000 pounds of the chemical manufactured or processed for the year.

1989 and thereafter -- 25,000 pounds of the chemical manufactured or processed for the year.

(b) With respect to a chemical otherwise used at a facility, 10,000 pounds of the chemical used for the applicable calendar year.

(c) With respect to activities involving a toxic chemical at a facility, when more than one threshold applies to the activities, the owner or operator of the facility must report if it exceeds any applicable threshold and must report on all activities at the facility involving the chemical, except as provided in § 372.38.

(d) When a facility manufactures, processes, or otherwise uses more than one member of a chemical category listed in § 372.65(c), the owner or operator of the facility must report if it exceeds any applicable threshold for the total volume of all the members of the category involved in the applicable activity. Any such report must cover all activities at the facility involving members of the category.

(e) A facility may process or otherwise use a toxic chemical in a recycle/reuse operation. To determine whether the facility has processed or used more than an applicable threshold of the chemical, the owner or operator of the facility shall count the amount of the chemical added to the recycle/reuse operation during the calendar year. In particular, if the facility starts up such an operation during a calendar year, or in the event that the contents of the whole recycle/reuse operation are replaced in a calendar year, the owner or operator of the facility shall also count the amount of the chemical placed into the system at these times.

(f) A toxic chemical may be listed in § 372.65 with the notation that only persons who manufacture the chemical, or manufacture it by a certain method, are required to report. In that case, only owners or operators of facilities that manufacture that chemical as described in § 372.65 in excess of the threshold applicable to such manufacture in § 372.25, § 372.27, or § 372.28 are required to report. In completing the reporting form, the owner or operator is only required to account for the quantity of the chemical so manufactured and releases associated with such manufacturing, but not releases associated with subsequent processing or use of the chemical at that facility. Owners and operators of facilities that solely process or use such a chemical are not required to report for that chemical.

(g) A toxic chemical may be listed in § 372.65 with the notation that it is in a specific form (e.g., fume or dust, solution, or friable) or of a specific color (e.g., yellow or white). In that case, only owners or operators of facilities that manufacture, process, or use that chemical in the form or of the color, specified in § 372.65 in excess of the threshold applicable to such activity in § 372.25, § 372.27, or § 372.28 are required to report. In completing the reporting form, the owner or operator is only required to account for the quantity of the chemical manufactured,

processed, or used in the form or color specified in § 372.65 and for releases associated with the chemical in that form or color. Owners or operators of facilities that solely manufacture, process, or use such a chemical in a form or color other than those specified by § 372.65 are not required to report for that chemical.

(h) Metal compound categories are listed in § 372.65(c). For purposes of determining whether any of the thresholds specified in § 372.25, § 372.27, or § 372.28 are met for metal compound category, the owner or operator of a facility must make the threshold determination based on the total amount of all members of the metal compound category manufactured, processed, or used at the facility. In completing the release portion of the reporting form for releases of the metal compounds, the owner or operator is only required to account for the weight of the parent metal released. Any contribution to the mass of the release attributable to other portions of each compound in the category is excluded.

§ 372.27 Alternate threshold and certification.

(a) With respect to the manufacture, process, or otherwise use of a toxic chemical, the owner or operator of a facility may apply an alternate threshold of 1 million pounds per year to that chemical if the owner or operator calculates that the facility would have an annual reportable amount of that toxic chemical not exceeding 500 pounds for the combined total quantities released at the facility, disposed within the facility, treated at the facility (as represented by amounts destroyed or converted by treatment processes), recovered at the facility as a result of recycle operations, combusted for the purpose of energy recovery at the facility, and amounts transferred from the facility to off-site locations for the purpose of recycle, energy recovery, treatment, and/or disposal. These volumes correspond to the sum of amounts reportable for data elements on EPA Form R (EPA Form 9350-1; Rev. 12/4/93) as Part II column B or sections 8.1 (quantity released), 8.2 (quantity used for energy recovery on-site), 8.3 (quantity used for energy recovery off-site), 8.4 (quantity recycled on-site), 8.5 (quantity recycled off-site), 8.6 (quantity treated on-site), and 8.7 (quantity treated off-site).

(b) If an owner or operator of a facility determines that the owner or operator may apply the alternate
reporting threshold specified in paragraph (a) of this section for a specific toxic chemical, the owner or
operator is not required to submit a report for that chemical under § 372.30, but must submit a certification
statement that contains the information required in § 372.95. The owner or operator of the facility must also
keep records as specified in § 372.10(d).

(c) Threshold determination provisions of § 372.25 and exemptions pertaining to threshold determinations in

§ 372.38 are applicable to the determination of whether the alternate threshold has been met.

(d) Each certification statement under this section for activities involving a toxic chemical that occurred during
a calendar year at a facility must be submitted to EPA and to the State in which the facility is located on or
before July 1 of the next year.

(e) The provisions of this section do not apply to any chemicals listed in § 372.28.

[59 FR 61502, Nov. 30, 1994, as amended at 64 FR 58750, Oct. 29, 1999]

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§ 372.28 Lower thresholds for chemicals of special concern.

(a) Notwithstanding § 372.25 or § 372.27, for the toxic chemicals set forth in this section, the threshold
amounts for manufacturing (including importing), processing, and otherwise using such toxic chemicals are as
set forth in this section.

(1) Chemical listing in alphabetic order.

Chemical name	CAS No.	Reporting threshold
Aldrin	00309-00-2	100
Benzo(g,h,i)perylene	00191-24-2	10
Chlordane	00057-74-9	10
Heptachlor	00076-44-8	10
Hexachlorobenzene	00118-74-1	10
Isodrin	00465-73-6	10
Lead (this lower threshold does not apply to lead when	7439-92-1	100

contained in a stainless steel,
brass or bronze alloy)
Mercury..... 07439-97-6 10
Methoxychlor..... 00072-43-5 100
Octachlorostyrene..... 29082-74-4 10
Pendimethalin..... 40487-42-1 100
Pentachlorobenzene..... 00608-93-5 10
Polychlorinated biphenyl (PCBs). 01336-36-3 10
Tetrabromobisphenol A..... 00079-94-7 100
Toxaphene..... 08001-35-2 10
Trifluralin..... 01582-09-8 100
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(2) Chemical categories in alphabetic order.

Category name	Reporting threshold
Dioxin and dioxin-like compounds (Manufacturing; and the processing or otherwise use of dioxin and dioxin-like compounds if the dioxin and dioxin-like compounds are present as contaminants in a chemical and if they were created during the manufacturing of that chemical) (This category includes only those chemicals listed below).	0.1 grams
1 1 67562-39-4 1,2,3,4,6,7,8-Heptachlorodibenzofuran	
55673-89-7 1,2,3,4,7,8,9-Heptachlorodibenzofuran	
70648-26-9 1,2,3,4,7,8-Hexachlorodibenzofuran	
57117-44-9 1,2,3,6,7,8-Hexachlorodibenzofuran	
72918-21-9 1,2,3,7,8,9-Hexachlorodibenzofuran	
60851-34-5 2,3,4,6,7,8-Hexachlorodibenzofuran	

39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	
Lead Compounds		100
39001-02-0	1,2,3,4,6,7,8,9-Octachlorodibenzofuran	
03268-87-9	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran	
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran	
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran	
01746-01-6	2,3,7,8 Tetrachlorodibenzo-p-dioxin	
Mercury compounds		10
Polycyclic aromatic compounds (PACs) (This category includes only those chemicals listed below).		100
00056-55-3	Benz(a)anthracene	
00205-99-2	Benzo(b)fluoranthene	
00205-82-3	Benzo(j)fluoranthene	
00207-08-9	Benzo(k)fluoranthene	
00206-44-0	Benzo(j,k)fluorene	
00189-55-9	Benzo(r,s,t)pentaphene	
00218-01-9	Benzo(a)phenanthrene	
00050-32-8	Benzo(a)pyrene	
00226-36-8	Dibenz(a,h)acridine	
00224-42-0	Dibenz(a,j)acridine	
00053-70-3	Dibenzo(a,h)anthracene	
00194-59-2	7H-Dibenzo(c,g)carbazole	

05385-75-1	Dibenzo(a,e)fluoranthene
00192-65-4	Dibenzo(a,e)pyrene
00189-64-0	Dibenzo(a,h)pyrene
00191-30-0	Dibenzo(a,l)pyrene
00057-97-6	7,12-Dimethylbenz(a)anthracene
00193-39-5	Indeno[1,2,3-cd]pyrene
00056-49-5	3-Methylcholanthrene
03697-24-3	5-Methylchrysene
05522-43-0	1-Nitropyrene

(b) The threshold determination provisions under § 372.25(c) through (h) and the exemptions under § 372.38(b) through (h) are applicable to the toxic chemicals listed in paragraph (a) of this section.

§ 372.30 Reporting requirements and schedule for reporting.

(a) For each toxic chemical known by the owner or operator to be manufactured (including imported), processed, or otherwise used in excess of an applicable threshold quantity in § 372.25, § 372.27, or § 372.28 at its covered facility described in § 372.22 for a calendar year, the owner or operator must submit to EPA and to the State in which the facility is located a completed EPA Form R (EPA Form 9350-1) in accordance with the instructions referred to in subpart E of this part.

(b)(1) The owner or operator of a covered facility is required to report as described in paragraph (a) of this section on a toxic chemical that the owner or operator knows is present as a component of a mixture or trade name product which the owner or operator receives from another person, if that chemical is imported, processed, or otherwise used by the owner or operator in excess of an applicable threshold quantity in § 372.25, § 372.27, or § 372.28 at the facility as part of that mixture or trade name product.

(2) The owner or operator knows that a toxic chemical is present as a component of a mixture or trade name

product (i) if the owner or operator knows or has been told the chemical identity or Chemical Abstracts
Service Registry Number of the chemical and the identity or Number corresponds to an identity or Number
in § 372.65, or (ii) if the owner or operator has been told by the supplier of the mixture or trade name
product that the mixture or trade name product contains a toxic chemical subject to section 313 of the Act or
this part.

(3) To determine whether a toxic chemical which is a component of a mixture or trade name product has
been imported, processed, or otherwise used in excess of an applicable threshold in § 372.25, § 372.27,
or § 372.28 at the facility, the owner or operator shall consider only the portion of the mixture or trade name
product that consists of the toxic chemical and that is imported, processed, or otherwise used at the facility,
together with any other amounts of the same toxic chemical that the owner or operator manufactures,
imports, processes, or otherwise uses at the facility as follows:

(i) If the owner or operator knows the specific chemical identity of the toxic chemical and the specific
concentration at which it is present in the mixture or trade name product, the owner or operator shall
determine the weight of the chemical imported, processed, or otherwise used as part of the mixture or trade
name product at the facility and shall combine that with the weight of the toxic chemical manufactured
(including imported), processed, or otherwise used at the facility other than as part of the mixture or trade
name product. After combining these amounts, if the owner or operator determines that the toxic chemical
was manufactured, processed, or otherwise used in excess of an applicable threshold in § 372.25,
§ 372.27, or § 372.28, the owner or operator shall report the specific chemical identity and all releases of
the toxic chemical on EPA Form R in accordance with the instructions referred to in subpart E of this part.

(ii) If the owner or operator knows the specific chemical identity of the toxic chemical and does not know the specific concentration at which the chemical is present in the mixture or trade name product, but has been told the upper bound concentration of the chemical in the mixture or trade name product, the owner or operator shall assume that the toxic chemical is present in the mixture or trade name product at the upper bound concentration, shall determine whether the chemical has been manufactured, processed, or otherwise used at the facility in excess of an applicable threshold as provided in paragraph (b)(3)(i) of this section, and shall report as provided in paragraph (b)(3)(i) of this section.

(iii) If the owner or operator knows the specific chemical identity of the toxic chemical, does not know the specific concentration at which the chemical is present in the mixture or trade name product, has not been told the upper bound concentration of the chemical in the mixture or trade name product, and has not otherwise developed information on the composition of the chemical in the mixture or trade name product, then the owner or operator is not required to factor that chemical in that mixture or trade name product into threshold and release calculations for that chemical.

(iv) If the owner or operator has been told that a mixture or trade name product contains a toxic chemical, does not know the specific chemical identity of the chemical and knows the specific concentration at which it is present in the mixture or trade name product, the owner or operator shall determine the weight of the chemical imported, processed, or otherwise used as part of the mixture or trade name product at the facility. Since the owner or operator does not know the specific identity of the toxic chemical, the owner or operator shall make the threshold determination only for the weight of the toxic chemical in the mixture or trade name product. If the owner or operator determines that the toxic chemical was imported, processed, or otherwise used as part of the mixture or trade name product in excess of an applicable threshold in § 372.25,

§ 372.27, or § 372.28, the owner or operator shall report the generic chemical name of the toxic chemical,
or a trade name if the generic chemical name is not known, and all releases of the toxic chemical on EPA
Form R in accordance with the instructions referred to in subpart E of this part.

(v) If the owner or operator has been told that a mixture or trade name product contains a toxic chemical,
does not know the specific chemical identity of the chemical, and does not know the specific concentration at
which the chemical is present in the mixture or trade name product, but has been told the upper bound
concentration of the chemical in the mixture or trade name product, the owner or operator shall assume that
the toxic chemical is present in the mixture or trade name product at the upper bound concentration, shall
determine whether the chemical has been imported, processed, or otherwise used at the facility in excess of
an applicable threshold as provided in paragraph (b)(3)(iv) of this section, and shall report as provided in
paragraph (b)(3)(iv) of this section.

(vi) If the owner or operator has been told that a mixture or trade name product contains a toxic chemical,
does not know the specific chemical identity of the chemical, does not know the specific concentration at
which the chemical is present in the mixture or trade name product, including information they have
themselves developed, and has not been told the upper bound concentration of the chemical in the mixture or
trade name product, the owner or operator is not required to report with respect to that toxic chemical.

(c) A covered facility may consist of more than one establishment. The owner or operator of such a facility at
which a toxic chemical was manufactured (including imported), processed, or otherwise used in excess of an
applicable threshold may submit a separate Form R for each establishment or for each group of establishments within the facility to report the activities involving the toxic chemical at each establishment or
group of establishments, provided that activities involving that toxic chemical at all the establishments within

the covered facility are reported. If each establishment or group of establishments files separate reports then
for all other chemicals subject to reporting at that facility they must also submit separate reports. However,
an establishment or group of establishments does not have to submit a report for a chemical that is not
manufactured (including imported), processed, otherwise used, or released at that establishment or group of
establishments.

(d) Each report under this section for activities involving a toxic chemical that occurred during a calendar year
at a covered facility must be submitted on or before July 1 of the next year. The first such report for calendar
year 1987 activities must be submitted on or before July 1, 1988.

§ 372.38 Exemptions.

(a) De minimis concentrations of a toxic chemical in a mixture. If a toxic chemical is present in a mixture
of chemicals at a covered facility and the toxic chemical is in a concentration in the mixture which is below 1
percent of the mixture, or 0.1 percent of the mixture in the case of a toxic chemical which is a carcinogen as
defined in 29 CFR 1910.1200(d)(4), a person is not required to consider the quantity of the toxic chemical
present in such mixture when determining whether an applicable threshold has been met under § 372.25 or
determining the amount of release to be reported under § 372.30. This exemption applies whether the
person received the mixture from another person or the person produced the mixture, either by mixing the
chemicals involved or by causing a chemical reaction which resulted in the creation of the toxic chemical in
the mixture. However, this exemption applies only to the quantity of the toxic chemical present in the mixture.
If the toxic chemical is also manufactured (including imported), processed, or otherwise used at the covered
facility other than as part of the mixture or in a mixture at higher concentrations, in excess of an applicable
threshold quantity set forth in § 372.25, the person is required to report under § 372.30. This exemption

does not apply to toxic chemicals listed in § 372.28, except for purposes of § 372.45(d)(1).

(b) Articles. If a toxic chemical is present in an article at a covered facility, a person is not required to consider the quantity of the toxic chemical present in such article when determining whether an applicable threshold has been met under § 372.25, § 372.27, or § 372.28 or determining the amount of release to be reported under § 372.30. This exemption applies whether the person received the article from another person or the person produced the article. However, this exemption applies only to the quantity of the toxic chemical present in the article. If the toxic chemical is manufactured (including imported), processed, or otherwise used at the covered facility other than as part of the article, in excess of an applicable threshold quantity set forth in § 372.25, § 372.27, or § 372.28, the person is required to report under § 372.30.
Persons potentially subject to this exemption should carefully review the definitions of article and release in § 372.3. If a release of a toxic chemical occurs as a result of the processing or use of an item at the facility, that item does not meet the definition of article.

(c) Uses. If a toxic chemical is used at a covered facility for a purpose described in this paragraph (c), a person is not required to consider the quantity of the toxic chemical used for such purpose when determining whether an applicable threshold has been met under § 372.25, § 372.27, or § 372.28 or determining the amount of releases to be reported under § 372.30. However, this exemption only applies to the quantity of the toxic chemical used for the purpose described in this paragraph (c). If the toxic chemical is also manufactured (including imported), processed, or otherwise used at the covered facility other than as described in this paragraph (c), in excess of an applicable threshold quantity set forth in § 372.25, § 372.27, or § 372.28, the person is required to report under § 372.30.

(1) Use as a structural component of the facility.

(2) Use of products for routine janitorial or facility grounds maintenance. Examples include use of janitorial
cleaning supplies, fertilizers, and pesticides similar in type or concentration to consumer products.

(3) Personal use by employees or other persons at the facility of foods, drugs, cosmetics, or other personal
items containing toxic chemicals, including supplies of such products within the facility such as in a facility
operated cafeteria, store, or infirmary.

(4) Use of products containing toxic chemicals for the purpose of maintaining motor vehicles operated by the
facility.

(5) Use of toxic chemicals present in process water and non-contact cooling water as drawn from the
environment or from municipal sources, or toxic chemicals present in air used either as compressed air or as
part of combustion.

(d) Activities in laboratories. If a toxic chemical is manufactured, processed, or used in a laboratory at a
covered facility under the supervision of a technically qualified individual as defined in § 720.3(ee) of this
title, a person is not required to consider the quantity so manufactured, processed, or used when determining
whether an applicable threshold has been met under § 372.25, § 372.27, or § 372.28 or determining the
amount of release to be reported under § 372.30. This exemption does not apply in the following cases:

(1) Specialty chemical production.

(2) Manufacture, processing, or use of toxic chemicals in pilot plant scale operations.

(3) Activities conducted outside the laboratory.

(e) Certain owners of leased property. The owner of a covered facility is not subject to reporting under
§ 372.30 if such owner's only interest in the facility is ownership of the real estate upon which the facility is

operated. This exemption applies to owners of facilities such as industrial parks, all or part of which are leased to persons who operate establishments within SIC code 20 through 39 where the owner has no other business interest in the operation of the covered facility.

(f) Reporting by certain operators of establishments on leased property such as industrial parks. If two or more persons, who do not have any common corporate or business interest (including common ownership or control), operate separate establishments within a single facility, each such person shall treat the establishments it operates as a facility for purposes of this part. The determinations in §§ 372.22 and 372.25 shall be made for those establishments. If any such operator determines that its establishment is a covered facility under § 372.22 and that a toxic chemical has been manufactured (including imported), processed, or otherwise used at the establishment in excess of an applicable threshold in § 372.25, § 372.27, or § 372.28 for a calendar year, the operator shall submit a report in accordance with § 372.30 for the establishment. For purposes of this paragraph (f), a common corporate or business interest includes ownership, partnership, joint ventures, ownership of a controlling interest in one person by the other, or ownership of a controlling interest in both persons by a third person.

(g) Coal extraction activities. If a toxic chemical is manufactured, processed, or otherwise used in extraction by facilities in SIC code 12, a person is not required to consider the quantity of the toxic chemical so manufactured, processed, or otherwise used when determining whether an applicable threshold has been met under § 372.25, § 372.27, or § 372.28, or determining the amounts to be reported under § 372.30.

(h) Metal mining overburden. If a toxic chemical that is a constituent of overburden is processed or otherwise used by facilities in SIC code 10, a person is not required to consider the quantity of the toxic

chemical so processed, or otherwise used when determining whether an applicable threshold has been met
under § 372.25, § 372.27, or § 372.28, or determining the amounts to be reported under § 372.30.

§ 372.45 Notification about toxic chemicals.

(a) Except as provided in paragraphs (c), (d), and (e) of this section and § 372.65, a person who owns or
operates a facility or establishment which:

(1) Is in Standard Industrial Classification codes 20 through 39 as set forth in paragraph (b) of § 372.22,

(2) Manufactures (including imports) or processes a toxic chemical, and

(3) Sells or otherwise distributes a mixture or trade name product containing the toxic chemical, to (i) a
facility described in § 372.22, or (ii) to a person who in turn may sell or otherwise distributes such mixture
or trade name product to a facility described in § 372.22(b), must notify each person to whom the mixture
or trade name product is sold or otherwise distributed from the facility or establishment in accordance with
paragraph (b) of this section.

(b) The notification required in paragraph (a) of this section shall be in writing and shall include:

(1) A statement that the mixture or trade name product contains a toxic chemical or chemicals subject to the
reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of
1986 and 40 CFR part 372.

(2) The name of each toxic chemical, and the associated Chemical Abstracts Service registry number of each
chemical if applicable, as set forth in § 372.65.

(3) The percent by weight of each toxic chemical in the mixture or trade name product.

(c) Notification under this section shall be provided as follows:

(1) For a mixture or trade name product containing a toxic chemical listed in § 373.65 with an effective date
of January 1, 1987, the person shall provide the written notice described in paragraph (b) of this section to
each recipient of the mixture or trade name product with at least the first shipment of each mixture or trade
name product to each recipient in each calendar year beginning January 1, 1989.

(2) For a mixture or trade name product containing a toxic chemical listed in § 372.65 with an effective date
of January 1, 1989 or later, the person shall provide the written notice described in paragraph (b) of this
section to each recipient of the mixture or trade name product with at least the first shipment of the mixture or
trade name product to each recipient in each calendar year beginning with the applicable effective date.

(3) If a person changes a mixture or trade name product for which notification was previously provided
under paragraph (b) of this section by adding a toxic chemical, removing a toxic chemical, or changing the
percent by weight of a toxic chemical in the mixture or trade name product, the person shall provide each
recipient of the changed mixture or trade name product a revised notification reflecting the change with the
first shipment of the changed mixture or trade name product to the recipient.

(4) If a person discovers (i) that a mixture or trade name product previously sold or otherwise distributed to
another person during the calendar year of the discovery contains one or more toxic chemicals and (ii), that
any notification provided to such other persons in that calendar year for the mixture or trade name product
either did not properly identify any of the toxic chemicals or did not accurately present the percent by weight
of any of the toxic chemicals in the mixture or trade name product, the person shall provide a new notification
to the recipient within 30 days of the discovery which contains the information described in paragraph (b) of
this section and identifies the prior shipments of the mixture or product in that calendar year to which the new
notification applies.

(5) If a Material Safety Data Sheet (MSDS) is required to be prepared and distributed for the mixture or
trade name product in accordance with 29 CFR 1910.1200, the notification must be attached to or
otherwise incorporated into such MSDS. When the notification is attached to the MSDS, the notice must
contain clear instructions that the notifications must not be detached from the MSDS and that any copying
and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the
MSDS subsequently redistributed.

(d) Notifications are not required in the following instances:

(1) If a mixture or trade name product contains no toxic chemical in excess of the applicable de minimis
concentration as specified in § 372.38(a).

(2) If a mixture or trade name product is one of the following:

(i) An article as defined in § 372.3

(ii) Foods, drugs, cosmetics, alcoholic beverages, tobacco, or tobacco products packaged for distribution to
the general public.

(iii) Any consumer product as the term is defined in the Consumer Product Safety Act (15 U.S.C. 1251 et
seq.) packaged for distribution to the general public.

(e) If the person considers the specific identity of a toxic chemical in a mixture or trade name product to be a
trade secret under provisions of 29 CFR 1910.1200, the notice shall contain a generic chemical name that is
descriptive of that toxic chemical.

(f) If the person considers the specific percent by weight composition of a toxic chemical in the mixture or
trade name product to be a trade secret under applicable State law or under the Restatement of Torts
section 757, comment b, the notice must contain a statement that the chemical is present at a concentration

that does not exceed a specified upper bound concentration value. For example, a mixture contains 12
percent of a toxic chemical. However, the supplier considers the specific concentration of the toxic chemical
in the product to be a trade secret. The notice would indicate that the toxic chemical is present in the mixture
in a concentration of no more than 15 percent by weight. The upper bound value chosen must be no larger
than necessary to adequately protect the trade secret.

(g) A person is not subject to the requirements of this section to the extent the person does not know that the
facility or establishment(s) is selling or otherwise distributing a toxic chemical to another person in a mixture
or trade name product. However, for purposes of this section, a person has such knowledge if the person
receives a notice under this section from a supplier of a mixture or trade name product and the person in turn
sells or otherwise distributes that mixture or trade name product to another person.

(h) If two or more persons, who do not have any common corporate or business interest (including common
ownership or control), as described in § 372.38(f), operate separate establishments within a single facility,
each such persons shall treat the establishment(s) it operates as a facility for purposes of this section. The
determination under paragraph (a) of this section shall be made for those establishments.

§ 372.65 Chemicals and chemical categories to which this part applies.

The requirements of this part apply to the following chemicals and chemical categories. This section contains
three listings. Paragraph (a) of this section is an alphabetical order listing of those chemicals that have an
associated Chemical Abstracts Service (CAS) Registry number. Paragraph (b) of this section contains a
CAS number order list of the same chemicals listed in paragraph (a) of this section. Paragraph (c) of this
section contains the chemical categories for which reporting is required. These chemical categories are listed
in alphabetical order and do not have CAS numbers. Each listing identifies the effective date for reporting
under § 372.30.

(a) Alphabetical listing.

Chemical name	CAS No.	Effective date
Abamectin [Avermectin B1]	71751-41-2	1/1/95
Acephate (Acetylphosphoramidothioic acid O,S-dimethyl ester)	30560-19-1	1/1/95
Acetaldehyde	75-07-0	1/1/87
Acetamide	60-35-5	1/1/87
Acetonitrile	75-05-8	1/1/87
Acetophenone	98-86-2	1/1/94
2-Acetylaminofluorene	53-96-3	1/1/87
Acifluorfen, sodium salt [5-(2-Chloro-4-(trifluoromethyl)phenoxy)-2-nitrobenzoic acid, sodium salt]	62476-59-9	1/1/95
Acrolein	107-02-8	1/1/87
Acrylamide	79-06-1	1/1/87
Acrylic acid	79-10-7	1/1/87
Acrylonitrile	107-13-1	1/1/87
Alachlor	15972-60-8	1/1/95
Aldicarb	116-06-3	1/1/95
Aldrin[1,4:5,8-Dimethanonaphthalene,1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-(1.alpha.,4.alpha.,4a.beta.,5.alpha.,8.alpha., 8a.beta.)-]	309-00-2	1/1/87
d-trans-Allethrin [d-trans-Chrysanthemic acid of d-allethrone]	28057-48-9	1/1/95
Allyl alcohol	107-18-6	1/1/90
Allylamine	107-11-9	1/1/95
Allyl chloride	107-05-1	1/1/87
Aluminum (fume or dust)	7429-90-5	1/1/87
Aluminum oxide (fibrous forms)	1344-28-1	1/1/87
Aluminum phosphide	20859-73-8	1/1/95
Ametryn (N-Ethyl-N'-(1-methylethyl)-6-(methylthio)-1,3,5,-triazine-2,4-diamine)	834-12-8	1/1/95
2-Aminoanthraquinone	117-79-3	1/1/87
4-Aminoazobenzene	60-09-3	1/1/87
4-Aminobiphenyl	92-67-1	1/1/87

1-Amino-2-methylanthraquinone.....	82-28-0	1/1/87
Amitraz.....	33089-61-1	1/1/95
Amitrole.....	61-82-5	1/1/94
Ammonia (includes anhydrous ammonia and aqueous ammonia from water dissociable ammonium salts and other sources; 10 percent of total aqueous ammonia is reportable under this listing).....	7664-41-7	1/1/87
Ammonium nitrate (solution).....	6484-52-2	1/1/87*
Anilazine [4,6-dichloro-N-(2-chlorophenyl)-1,3,5-triazin-2-amine].....	101-05-3	1/1/95
Aniline.....	62-53-3	1/1/87
o-Anisidine.....	90-04-0	1/1/87
p-Anisidine.....	104-94-9	1/1/87
o-Anisidine hydrochloride.....	134-29-2	1/1/87
Anthracene.....	120-12-7	1/1/87
Antimony.....	7440-36-0	1/1/87
Arsenic.....	7440-38-2	1/1/87
Asbestos (friable).....	1332-21-4	1/1/87
Atrazine (6-Chloro-N-ethyl-N'-(1-methylethyl)-1,3,5,-triazine-2,4-diamine).....	1912-24-9	1/1/95
Barium.....	7440-39-3	1/1/87
Bendiocarb [2,2-Dimethyl-1,3-benzodioxol-4-ol methylcarbamate].....	22781-23-3	1/1/95
Benfluralin (N-Butyl-N-ethyl-2,6-dinitro-4-(trifluoromethyl)benzenamine).....	1861-40-1	1/1/95
Benomyl.....	17804-35-2	1/1/95
Benzal chloride.....	98-87-3	1/1/87
Benzamide.....	55-21-0	1/1/87
Benzene.....	71-43-2	1/1/87
Benzidine.....	92-87-5	1/1/87
Benzo(g,h,i)perylene.....	00191-24-2	1/00
Benzoic trichloride (Benzotrichloride).....	98-07-7	1/1/87
Benzoyl chloride.....	98-88-4	1/1/87
Benzoyl peroxide.....	94-36-0	1/1/87
Benzyl chloride.....	100-44-7	1/1/87
Beryllium.....	7440-41-7	1/1/87
Bifenthrin.....	82657-04-3	1/1/95
Biphenyl.....	92-52-4	1/1/87
Bis(2-chloroethoxy)methane.....	111-91-1	1/1/94
Bis(2-chloroethyl) ether.....	111-44-4	1/1/87
Bis(chloromethyl) ether.....	542-88-1	1/1/87

Bis(2-chloro-1-methylethyl) ether..... 108-60-1 1/1/87
Bis(tributylin) oxide..... 56-35-9 1/1/95
Boron trichloride..... 10294-34-5 1/1/95
Boron trifluoride..... 7637-07-2 1/1/95
Bromacil (5-Bromo-6-methyl-3-(1-methylpropyl)- 314-40-9 1/1/95
2,4-(1H,3H)-pyrimidinedione).....
Bromacil, lithium salt [2,4-(1H,3H)- 53404-19-6 1/1/95
Pyrimidinedione, 5-bromo-6-methyl-3-(1-
methylpropyl), lithium salt].....
Bromine..... 7726-95-6 1/1/95
1-Bromo-1-(bromomethyl)-1,3- 35691-65-7 1/1/95
propanedicarbonitrile.....
Bromochlorodifluoromethane (Halon 1211)..... 353-59-3 7/8/90
Bromoform (Tribromomethane)..... 75-25-2 1/1/87
Bromomethane (Methyl bromide)..... 74-83-9 1/1/87
Bromotrifluoromethane (Halon 1301)..... 75-63-8 7/8/90
Bromoxynil (3,5-Dibromo-4- 1689-84-5 1/1/95
hydroxybenzonitrile).....
Bromoxynil octanoate (Octanoic acid, 2,6- 1689-99-2 1/1/95
dibromo-4-cyanophenyl ester).....
Brucine..... 357-57-3 1/1/95
1,3-Butadiene..... 106-99-0 1/1/87
Butyl acrylate..... 141-32-2 1/1/87
n-Butyl alcohol..... 71-36-3 1/1/87
sec-Butyl alcohol..... 78-92-2 1/1/87
tert-Butyl alcohol..... 75-65-0 1/1/87
1,2-Butylene oxide..... 106-88-7 1/1/87
Butyraldehyde..... 123-72-8 1/1/87
C.I. Acid Green 3..... 4680-78-8 1/1/87
C.I. Basic Green 4..... 569-64-2 1/1/87
C.I. Acid Red 114..... 6459-94-5 1/1/95
C.I. Basic Red 1..... 989-38-8 1/1/87
C.I. Direct Black 38..... 1937-37-7 1/1/87
C.I. Direct Blue 6..... 2602-46-2 1/1/87
C.I. Direct Blue 218..... 28407-37-6 1/1/95
C.I. Direct Brown 95..... 16071-86-6 1/1/87
C.I. Disperse Yellow 3..... 2832-40-8 1/1/87
C.I. Food Red 5..... 3761-53-3 1/1/87
C.I. Food Red 15..... 81-88-9 1/1/87
C.I. Solvent Orange 7..... 3118-97-6 1/1/87
C.I. Solvent Yellow 3..... 97-56-3 1/1/87
C.I. Solvent Yellow 14..... 842-07-9 1/1/87

C.I. Solvent Yellow 34 (Aurimine)..... 492-80-8 1/1/87
C.I. Vat Yellow 4..... 128-66-5 1/1/87
Cadmium..... 7440-43-9 1/1/87
Calcium cyanamide..... 156-62-7 1/1/87
Captan[1H-Isoindole-1,3(2H)-dione,3a,4,7,7a- tetrahydro-2-[(trichloromethyl)thio]-]..... 133-06-2 1/1/87
Carbaryl [1-Naphthalenol, methylcarbamate]... 63-25-2 1/1/87
Carbofuran..... 1563-66-2 1/1/95
Carbon disulfide..... 75-15-0 1/1/87
Carbon tetrachloride..... 56-23-5 1/1/87
Carbonyl sulfide..... 463-58-1 1/1/87
Carboxin (5,6-Dihydro-2-methyl-N-phenyl-1,4- oxathiin-3-carboxamide)..... 5234-68-4 1/1/95
Catechol..... 120-80-9 1/1/87
Chinomethionat [6-Methyl-1,3-dithiolo[4,5- b]quinoxalin-2-one]..... 2439-01-2 1/1/95
Chloramben [Benzoic acid,3-amino-2,5-dichloro-]..... 133-90-4 1/1/87
Chlordane [4,7-Methanoindan,1,2,4,5,6,7,8,8- octachloro-2,3,3a,4,7,7a-hexahydro-]..... 57-74-9 1/1/87
Chlorendic acid..... 115-28-6 1/1/95
Chlorimuron ethyl [Ethyl-2-[[[(4-chloro-6- methoxyprimidin-2-yl)-carbonyl]- amino]sulfonyl]benzoate]..... 90982-32-4 1/1/95
Chlorine..... 7782-50-5 1/1/87
Chlorine dioxide..... 10049-04-4 1/1/87
Chloroacetic acid..... 79-11-8 1/1/87
2-Chloroacetophenone..... 532-27-4 1/1/87
1-(3-Chloroallyl)-3,5,7-triaza-1- azoniaadamantane chloride..... 4080-31-3 1/1/95
p-Chloroaniline..... 106-47-8 1/1/95
Chlorobenzene..... 108-90-7 1/1/87
Chlorobenzilate [Benzeneacetic acid, 4-chloro- .alpha.-(4-.chlorophenyl)-.alpha.-hydroxy-, ethyl ester]..... 510-15-6 1/1/87
1-Chloro-1,1-difluoroethane (HCFC-142b)..... 75-68-3 1/1/94
Chlorodifluoromethane (HCFC-22)..... 75-45-6 1/1/94
Chloroethane (Ethyl chloride)..... 75-00-3 1/1/87
Chloroform..... 67-66-3 1/1/87
Chloromethane (Methyl chloride)..... 74-87-3 1/1/87
Chloromethyl methyl ether..... 107-30-2 1/1/87
3-Chloro-2-methyl-1-propene..... 563-47-3 1/1/95

p-Chlorophenyl isocyanate..... 104-12-1 1/1/95
Chloropicrin..... 76-06-2 1/1/95
Chloroprene..... 126-99-8 1/1/87
3-Chloropropionitrile..... 542-76-7 1/1/95
Chlorotetrafluoroethane..... 63938-10-3 1/1/94
1-Chloro-1,1,2,2-tetrafluoroethane (HCFC-124a)..... 354-25-6 1/1/94
2-Chloro-1,1,1,2-tetrafluoroethane (HCFC-124) 2837-89-0 1/1/94
Chlorothalonil [1,3-Benzenedicarbonitrile,2,4,5,6-tetrachloro-]. 1897-45-6 1/1/87
p-Chloro-o-toluidine..... 95-69-2 1/1/95
2-Chloro-1,1,1-trifluoro-ethane (HCFC-133a).. 75-88-7 1/1/95
Chlorotrifluoromethane (CFC-13)..... 75-72-9 1/1/95
3-Chloro-1,1,1-trifluoro-propane (HCFC-253fb) 460-35-5 1/1/95
Chlorpyrifos methyl [O,O-dimethyl-O-(3,5,6-trichloro-2-pyridyl)phosphorothioate..... 5598-13-0 1/1/95
Chlorsulfuron [2-chloro-N-[[4-methoxy-6-methyl-1,3,5-triazin-2-yl)amino]carbonyl]benzenesulfonamide]..... 64902-72-3 1/1/95
Chromium..... 7440-47-3 1/1/87
Cobalt..... 7440-48-4 1/1/87
Copper..... 7440-50-8 1/1/87
Creosote..... 8001-58-9 1/1/90
p-Cresidine..... 120-71-8 1/1/87
Cresol (mixed isomers)..... 1319-77-3 1/1/87
m-Cresol..... 108-39-4 1/1/87
o-Cresol..... 95-48-7 1/1/87
p-Cresol..... 106-44-5 1/1/87
Crotonaldehyde..... 4170-30-3 1/1/95
Cumene..... 98-82-8 1/1/87
Cumene hydroperoxide..... 80-15-9 1/1/87
Cupferron[Benzeneamine, N-hydroxy-N-nitroso, ammonium salt]..... 135-20-6 1/1/87
Cyanazine..... 21725-46-2 1/1/95
Cycloate..... 1134-23-2 1/1/95
Cyclohexane..... 110-82-7 1/1/87
Cyclohexanol..... 108-93-0 1/1/95
Cyfluthrin [3-(2,2-Dichloroethenyl)-2,2-dimethylcyclopropanecarboxylic acid, cyano(4-fluoro-3-phenoxyphenyl)methyl ester]..... 68359-37-5 1/1/95
Cyhalothrin [3-(2-Chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylic 68085-85-8 1/1/95

acid cyano(3-phenoxyphenyl)methyl ester]....
2,4-D [Acetic acid, (2,4-dichlorophenoxy)-].. 94-75-7 1/1/87
Dazomet(Tetrahydro-3,5-dimethyl-2H-1,3,5- 533-74-4 1/1/95
thiadiazine-2-thione).....
Dazomet, sodium salt [Tetrahydro-3,5-dimethyl- 53404-60-7 1/1/95
2H-1,3,5-thiadiazine-2-thione, ion(1-),
sodium].....
2,4,-DB..... 94-82-6 1/1/95
2,4-D butoxyethyl ester..... 1929-73-3 1/1/95
2,4-D butyl ester..... 94-80-4 1/1/95
2,4-D chlorocrotyl ester..... 2971-38-2 1/1/95
Decabromodiphenyl oxide..... 1163-19-5 1/1/87
Desmedipham..... 13684-56-5 1/1/95
2,4-D 2-ethylhexyl ester..... 1928-43-4 1/1/95
2,4-D 2-ethyl-4-methylpentyl ester..... 53404-37-8 1/1/95
Diallate [Carbamothioic acid, bis(1- 2303-16-4 1/1/87
methylethyl)-, S-(2,3-dichloro-2-propenyl)
ester].....
2,4-Diaminoanisole..... 615-05-4 1/1/87
2,4-Diaminoanisole sulfate..... 39156-41-7 1/1/87
4,4'-Diaminodiphenyl ether..... 101-80-4 1/1/87
Diaminotoluene (mixed isomers)..... 25376-45-8 1/1/87
2,4-Diaminotoluene..... 95-80-7 1/1/87
Diazinon..... 333-41-5 1/1/95
Diazomethane..... 334-88-3 1/1/87
Dibenzofuran..... 132-64-9 1/1/87
1,2-Dibromo-3-chloropropane (DBCP)..... 96-12-8 1/1/87
2,2-Dibromo-3-nitrilopropionamide..... 10222-01-2 1/1/95
1,2-Dibromoethane (Ethylene dibromide)..... 106-93-4 1/1/87
Dibromotetrafluoroethane (Halon 2402)..... 124-73-2 7/8/90
Dibutyl phthalate..... 84-74-2 1/1/87
Dicamba (3,6-Dichloro-2-methoxybenzoic acid). 1918-00-9 1/1/95
Dichloran [2,6-Dichloro-4-nitroaniline]..... 99-30-9 1/1/95
Dichlorobenzene (mixed isomers)..... 25321-22-6 1/1/87
1,2-Dichlorobenzene..... 95-50-1 1/1/87
1,3-Dichlorobenzene..... 541-73-1 1/1/87
1,4-Dichlorobenzene..... 106-46-7 1/1/87
3,3'-Dichlorobenzidine..... 91-94-1 1/1/87
3,3'-Dichlorobenzidine dihydrochloride..... 612-83-9 1/1/95
3,3'-Dichlorobenzidine sulfate..... 64969-34-2 1/1/95
Dichlorobromomethane..... 75-27-4 1/1/87
1,4-Dichloro-2-butene..... 764-41-0 1/1/94

trans-1,4-Dichloro-2-butene..... 110-57-6 1/1/95
1,2-Dichloro-1,1-difluoroethane (HCFC-132b).. 1649-08-7 1/1/95
Dichlorodifluoromethane (CFC-12)..... 75-71-8 7/8/90
Dichlorofluoromethane (HCFC-21)..... 75-43-4 1/1/95
1,2-Dichloroethane (Ethylene dichloride)..... 107-06-2 1/1/87
1,2-Dichlorethylene..... 540-59-0 1/1/87
1,1-Dichloro-1-fluoroethane (HCFC-141b)..... 1717-00-6 1/1/94
Dichloromethane (Methylene chloride)..... 75-09-2 1/1/87
Dichloropentafluoropropane..... 127564-92-5 1/1/95
1,1-dichloro-1,2,2,3,3-pentafluoropropane (HCFC-225cc)..... 13474-88-9 1/1/95
1,1-dichloro-1,2,3,3,3-pentafluoropropane (HCFC-225eb)..... 111512-56-2 1/1/95
1,2-dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225bb)..... 422-44-6 1/1/95
1,2-dichloro-1,1,3,3,3-pentafluoropropane (HCFC-225da)..... 431-86-7 1/1/95
1,3-dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)..... 507-55-1 1/1/95
1,3-dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225ea)..... 136013-79-1 1/1/95
2,2-dichloro-1,1,1,3,3-pentafluoropropane (HCFC-225aa)..... 128903-21-9 1/1/95
2,3-dichloro-1,1,1,2,3-pentafluoropropane (HCFC-225ba)..... 422-48-0 1/1/95
3,3-dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)..... 422-56-0 1/1/95
Dichlorophene [2,2'-Methylene-bis(4-chlorophenol)]..... 97-23-4 1/1/95
2,4-Dichlorophenol..... 120-83-2 1/1/87
1,2-Dichloropropane..... 78-87-5 1/1/87
2,3-Dichloropropene..... 78-88-6 1/1/90
trans-1,3-Dichloropropene..... 10061-02-6 1/1/95
1,3-Dichloropropylene..... 542-75-6 1/1/87
Dichlorotetrafluoroethane (CFC-114)..... 76-14-2 7/8/90
Dichlorotrifluoroethane..... 34077-87-7 1/1/94
Dichloro-1,1,2-trifluoroethane..... 90454-18-5 1/1/94
1,1-Dichloro-1,2,2-trifluoroethane (HCFC-123b)..... 812-04-4 1/1/94
1,2-Dichloro-1,1,2-trifluoroethane (HCFC-123a)..... 354-23-4 1/1/94
2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123) 306-83-2 1/1/94

Dichlorvos [Phosphoric acid, 2,2-dichloroethenyl dimethyl ester].....	62-73-7	1/1/87
Diclofop methyl [2-[4-(2,4-Dichlorophenoxy)phenoxy]propanoic acid, methyl ester].....	51338-27-3	1/1/95
Dicofol [Benzenemethanol,4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-(trichloromethyl)-]...	115-32-2	1/1/87
Dicyclopentadiene.....	77-73-6	1/1/95
Diepoxybutane.....	1464-53-5	1/1/87
Diethanolamine.....	111-42-2	1/1/87
Diethatyl ethyl.....	38727-55-8	1/1/95
Di (2-ethylhexyl)phthalate.....	117-81-7	1/1/87
Diethyl sulfate.....	64-67-5	1/1/87
Diflubenzuron.....	35367-38-5	1/1/95
Diglycidyl resorcinol ether.....	101-90-6	1/1/95
Dimethipin [2,3,-Dihydro-5,6-dimethyl-1,4-dithiin-1,1,4,4-tetraoxide].....	55290-64-7	1/1/95
Dimethoate.....	60-51-5	1/1/95
Dihydrosafrole.....	94-58-6	1/1/94
3,3-Dimethoxybenzidine.....	119-90-4	1/1/87
3,3'-Dimethoxybenzidine dihydrochloride (o-Dianisidine dihydrochloride).....	20325-40-0	1/1/95
3,3'-Dimethoxybenzidine hydrochloride (o-Dianisidine hydrochloride).....	111984-09-9	1/1/95
Dimethylamine.....	124-40-3	1/1/95
Dimethylamine dicamba.....	2300-66-5	1/1/95
4-Dimethylaminoazobenzene.....	60-11-7	1/1/87
3,3-Dimethylbenzidine (o-Tolidine).....	119-93-7	1/1/87
3,3'-Dimethylbenzidine dihydrochloride (o-Tolidine dihydrochloride).....	612-82-8	1/1/95
3,3'-Dimethylbenzidine dihydrofluoride (o-Tolidine dihydrofluoride).....	41766-75-0	1/1/95
Dimethylcarbamyl chloride.....	79-44-7	1/1/87
Dimethyl chlorothiophosphate.....	2524-03-0	1/1/95
N,N-Dimethylformamide.....	68-12-2	1/1/95
1,1-Dimethyl hydrazine.....	57-14-7	1/1/87
2,4-Dimethylphenol.....	105-67-9	1/1/87
Dimethyl phthalate.....	131-11-3	1/1/87
Dimethyl sulfate.....	77-78-1	1/1/87
m-Dinitrobenzene.....	99-65-0	1/1/90
o-Dinitrobenzene.....	528-29-0	1/1/90
p-Dinitrobenzene.....	100-25-4	1/1/90

Dinitrobutyl phenol (Dinoseb).....	88-85-7	1/1/95
Dinocap.....	39300-45-3	1/1/95
4,6-Dinitro-o-cresol.....	534-52-1	1/1/87
2,4-Dinitrophenol.....	51-28-5	1/1/87
2,4-Dinitrotoluene.....	121-14-2	1/1/87
2,6-Dinitrotoluene.....	606-20-2	1/1/87
Dinitrotoluene (mixed isomers).....	25321-14-6	1/1/90
1,4-Dioxane.....	123-91-1	1/1/87
Diphenamid.....	957-51-7	1/1/95
Diphenylamine.....	122-39-4	1/1/95
1,2-Diphenylhydrazine (Hydrazobenzene).....	122-66-7	1/1/87
Dipotassium endothall [7-Oxabicyclo(2.2.1)heptane-2,3-dicarboxylic acid, dipotassium salt].....	2164-07-0	1/1/95
Dipropyl isocinchomeronate.....	136-45-8	1/1/95
Disodium cyanodithioimidocarbonate.....	138-93-2	1/1/95
2,4-D isopropyl ester.....	94-11-1	1/1/95
2,4-Dithiobiuret.....	541-53-7	1/1/95
Diuron.....	330-54-1	1/1/95
Dodine [Dodecylguanidine monoacetate].....	2439-10-3	1/1/95
2,4,-DP.....	120-36-5	1/1/95
2,4-D propylene glycol butyl ether ester.....	1320-18-9	1/1/95
2,4-D sodium salt.....	2702-72-9	1/1/95
Epichlorohydrin.....	106-89-8	1/1/87
Ethoprop [Phosphorodithioic acid O-ethyl S,S-dipropyl ester].....	13194-48-4	1/1/95
2-Ethoxyethanol.....	110-80-5	1/1/87
Ethyl acrylate.....	140-88-5	1/1/87
Ethylbenzene.....	100-41-4	1/1/87
Ethyl chloroformate.....	541-41-3	1/1/87
Ethyl dipropylthiocarbamate [EPTC].....	759-94-4	1/1/95
Ethylene.....	74-85-1	1/1/87
Ethylene glycol.....	107-21-1	1/1/87
Ethyleneimine(Aziridine).....	151-56-4	1/1/87
Ethylene oxide.....	75-21-8	1/1/87
Ethylene thiourea.....	96-45-7	1/1/87
Ethylidene dichloride.....	75-34-3	1/1/94
Famphur.....	52-85-7	1/1/95
Fenarimol [.alpha.-(2-Chlorophenyl)-.alpha.-4-chlorophenyl)-5-pyrimidinemethanol].....	60168-88-9	1/1/95
Fenbutatin oxide (Hexakis(2-methyl-2-phenyl-propyl)distannoxane).....	13356-08-6	1/1/95

Fenoxaprop ethyl [2-(4-((6-Chloro-2-benzoxazolylen)oxy)phenoxy)propanoic acid,ethyl ester]..... 66441-23-4 1/1/95

Fenoxycarb [2-(4-Phenoxyphenoxy)ethyl]carbamic acid ethyl ester]..... 72490-01-8 1/1/95

Fenpropathrin [2,2,3,3-Tetramethylcyclopropane carboxylic acid cyano(3-phenoxy-phenyl)methyl ester]..... 39515-41-8 1/1/95

Fenthion [O,O-Dimethyl O-[3-methyl-4-(methylthio)phenyl]ester, phosphorothioic acid]..... 55-38-9 1/1/95

Fenvalerate [4-Chloro-alpha-(1-methylethyl)benzeneacetic acid cyano(3-phenoxyphenyl)methyl ester]..... 51630-58-1 1/1/95

Ferbam [Tris(dimethylcarbamo-dithioato-S,S')iron]..... 14484-64-1 1/1/95

Fluazifop-butyl [2-[4-[[5-(Trifluoromethyl)-2-pyridinyl]oxy]-phenoxy]propanoic acid, butyl ester]..... 69806-50-4 1/1/95

Fluorine..... 7782-41-4 1/1/95

Fluorouracil (5-Fluorouracil)..... 51-21-8 1/1/95

Fluvalinate [N-[2-Chloro-4-(trifluoromethyl)phenyl]-DL-valine(+)-cyano (3-phenoxyphenyl)methyl ester]..... 69409-94-5 1/1/95

Folpet..... 133-07-3 1/1/95

Fomesafen [5-(2-Chloro-4-(trifluoromethyl)phenoxy)-N-methylsulfonyl)-2-nitrobenzamide]..... 72178-02-0 1/1/95

Fluometuron [Urea, N,N-dimethyl-N-[3-(trifluoromethyl)phenyl]-]..... 2164-17-2 1/1/87

Formaldehyde..... 50-00-0 1/1/87

Formic acid..... 64-18-6 1/1/94

Freon 113 [Ethane, 1,1,2-trichloro-1,2,2-trifluoro-]..... 76-13-1 1/1/87

Heptachlor[1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene]. 76-44-8 1/1/87

Hexachlorobenzene..... 118-74-1 1/1/87

Hexachloro-1,3-butadiene..... 87-68-3 1/1/87

alpha-Hexachlorocyclohexane..... 319-84-6 1/1/95

Hexachlorocyclopentadiene..... 77-47-4 1/1/87

Hexachloroethane..... 67-72-1 1/1/87

Hexachloronaphthalene..... 1335-87-1 1/1/87
Hexachlorophene..... 70-30-4 1/1/94
Hexamethylphosphoramide..... 680-31-9 1/1/87
n-Hexane..... 110-54-3 1/1/95
Hexazinone..... 51235-04-2 1/1/95
Hydramethylnon [Tetrahydro-5,5-dimethyl-2(1H)- pyrimidinone[3-[4-(trifluoromethyl)phenyl]-1- [2-[4-(trifluoromethyl)phenyl]ethenyl]-2- propenylidene]hydrazone]..... 67485-29-4 1/1/95
Hydrazine..... 302-01-2 1/1/87
Hydrazine sulfate..... 10034-93-2 1/1/87
Hydrochloric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)..... 7647-01-0 1/1/87
Hydrogen cyanide..... 74-90-8 1/1/87
Hydrogen fluoride..... 7664-39-3 1/1/87
Hydrogen sulfide..Hydroquinone..... 123-31-9 1/1/87
Imazalil [1-[2-(2,4-Dichlorophenyl)-2-(2- propenyloxy)ethyl]-1H-imidazole]..... 35554-44-0 1/1/95
3-Iodo-2-propynyl butylcarbamate..... 55406-53-6 1/1/95
Iron pentacarbonyl..... 13463-40-6 1/1/95
Isobutyraldehyde..... 78-84-2 1/1/87
Isodrin..... 465-73-6 1/1/95
Isofenphos [2-[[Ethoxyl[(1- methylethyl)amino]phosphinothioyl]oxy]benzoi c acid 1-methylethyl ester]..... 25311-71-1 1/1/95
Isopropyl alcohol (Only persons who manufacture by the strong acid process are subject, no supplier notifiction.)..... 67-63-0 1/1/87
4,4'-Isopropylidenediphenol..... 80-05-7 1/1/87
Isosafrole..... 120-58-1 1/1/90
Lactofen [5-(2-Chloro-4- (trifluoromethyl)phenoxy)-2-nitro-2-ethoxy-1- methyl-2-oxoethyl ester]..... 77501-63-4 1/1/95
Lead..... 7439-92-1 1/1/87
Lindane [Cyclohexane, 1,2,3,4,5,6-hexachloro- (1.alpha.,2.alpha.,3.beta.,4.alpha.,5.alpha. ,6.beta.)-]..... 58-89-9 1/1/87
Linuron..... 330-55-2 1/1/95
Lithium carbonate..... 554-13-2 1/1/95
Malathion..... 121-75-5 1/1/95
Maleic anhydride..... 108-31-6 1/1/87

Malononitrile..... 109-77-3 1/1/94
Maneb [Carbamodithioic acid, 1,2- 12427-38-2 1/1/87
ethanediylbis-, manganese complex].....
Manganese..... 7439-96-5 1/1/87
Mecoprop..... 93-65-2 1/1/95
2-Mercaptobenzothiazole (MBT)..... 149-30-4 1/1/95
Mercury..... 7439-97-6 1/1/87
Merphos..... 150-50-5 1/1/95
Metham sodium (Sodium methyldithiocarbamate). 137-42-8 1/1/95
Methacrylonitrile..... 126-98-7 1/1/94
Methanol..... 67-56-1 1/1/87
Methazole [2-(3,4-Dichlorophenyl)-4-methyl- 20354-26-1 1/1/95
1,2,4-oxadiazolidine-3,5-dione].....
Methiocarb..... 2032-65-7 1/1/95
Methoxone (4-Chloro-2-methylphenoxy) acetic 94-74-6 1/1/95
acid (MCPA))).....
Methoxone-sodium salt ((4-chloro-2- 3653-48-3 1/1/95
methylphenoxy) acetate sodium salt).....
Methoxychlor [Benzene, 1,1'-(2,2,2- 72-43-5 1/1/87
trichloroethylidene)bis[4-methoxy-].....
2-Methoxyethanol..... 109-86-4 1/1/87
Methyl isothiocyanate [Isothiocyanatomethane] 556-61-6 1/1/95
2-Methyllactonitrile..... 75-86-5 1/1/95
Methyl acrylate..... 96-33-3 1/1/87
Methyl tert-butyl ether..... 1634-04-4 1/1/87
Methyl chlorocarbonate..... 79-22-1 1/1/94
4,4'-Methylenebis(2-chloroaniline) (MBOCA)... 101-14-4 1/1/87
4,4'-Methylenebis(N,N-dimethyl) benzenamine.. 101-61-1 1/1/87
Methylenebis(phenylisocyanate) (MDI)..... 101-68-8 1/1/87
Methylene bromide..... 74-95-3 1/1/87
4,4'-Methylenedianiline..... 101-77-9 1/1/87
Methyl ethyl ketone..... 78-93-3 1/1/87
Methyl hydrazine..... 60-34-4 1/1/87
Methyl iodide..... 74-88-4 1/1/87
Methyl isobutyl ketone..... 108-10-1 1/1/87
Methyl isocyanate..... 624-83-9 1/1/87
Methyl mercaptan..... 74-93-1 1/1/94
Methyl methacrylate..... 80-62-6 1/1/87
N-Methylolacrylamide..... 924-42-5 1/1/95
Methyl parathion..... 298-00-0 1/1/95
N-Methyl-2-pyrrolidone..... 872-50-4 1/1/95
2-Methylpyridine..... 109-06-8 1/1/94

Metiram.....	9006-42-2	1/1/95
Metribuzin.....	21087-64-9	1/1/95
Mevinphos.....	7786-34-7	1/1/95
Michler's ketone.....	90-94-8	1/1/87
Molinate (1H-Azepine-1-carbothioic acid, hexahydro-S-ethyl ester).....	2212-67-1	1/1/95
Molybdenum trioxide.....	1313-27-5	1/1/87
(Mono)chloropentafluoroethane (CFC-115).....	76-15-3	7/8/90
Monuron.....	150-68-5	1/1/95
Mustard gas [Ethane, 1,1'-thiobis[2-chloro-].	505-60-2	1/1/87
Myclobutanil [.alpha.-Butyl-.alpha.-(4-chlorophenyl)-1H-1,2,4-triazole-1-propanenitrile].....	88671-89-0	1/1/95
Nabam.....	142-59-6	1/1/95
Naled.....	300-76-5	1/1/95
Naphthalene.....	91-20-3	1/1/87
alpha-Naphthylamine.....	134-32-7	1/1/87
beta-Naphthylamine.....	91-59-8	1/1/87
Nickel.....	7440-02-0	1/1/87
Nitrapyrin (2-Chloro-6-(trichloromethyl) pyridine).....	1929-82-4	1/1/95
Nitric acid.....	7697-37-2	1/1/87
Nitrilotriacetic acid.....	139-13-9	1/1/87
5-Nitro-o-anisidine.....	99-59-2	1/1/87
5-Nitro-o-toluidine.....	99-55-8	1/1/94
p-Nitroaniline.....	100-01-6	1/1/95
Nitrobenzene.....	98-95-3	1/1/87
4-Nitrobiphenyl.....	92-93-3	1/1/87
Nitrofen [Benzene, 2,4-dichloro-1-(4-nitrophenoxy)-].....	1836-75-5	1/1/87
Nitrogen mustard [2-Chloro-N-(2-chloroethyl)-N-methylethanamine].....	51-75-2	1/1/87
Nitroglycerin.....	55-63-0	1/1/87
2-Nitrophenol.....	88-75-5	1/1/87
4-Nitrophenol.....	100-02-7	1/1/87
2-Nitropropane.....	79-46-9	1/1/87
p-Nitrosodiphenylamine.....	156-10-5	1/1/87
N,N-Dimethylaniline.....	121-69-7	1/1/87
N-Nitrosodi-n-butylamine.....	924-16-3	1/1/87
N-Nitrosodiethylamine.....	55-18-5	1/1/87
N-Nitrosodimethylamine.....	62-75-9	1/1/87
N-Nitrosodiphenylamine.....	86-30-6	1/1/87

N-Nitrosodi-n-propylamine..... 621-64-7 1/1/87
N-Nitrosomethylvinylamine..... 4549-40-0 1/1/87
N-Nitrosomorpholine..... 59-89-2 1/1/87
N-Nitroso-N-ethylurea..... 759-73-9 1/1/87
N-Nitroso-N-methylurea..... 684-93-5 1/1/87
N-Nitrosonornicotine..... 16543-55-8 1/1/87
N-Nitrosopiperidine..... 100-75-4 1/1/87
Norflurazon [4-Chloro-5-(methylamino)-2-[3- 27314-13-2 1/1/95
(trifluoromethyl)phenyl]-3(2H)-pyridazinone]
Octachloronaphthalene..... 2234-13-1 1/1/87
Octachlorostyrene..... 29082-74-4 1/00
Oryzalin [4-(Dipropylamino)-3,5- 19044-88-3 1/1/95
dinitrobenzenesulfonamide].....
Osmium tetroxide..... 20816-12-0 1/1/87
Oxydemeton methyl [S-(2-(ethylsulfinyl)ethyl) 301-12-2 1/1/95
o,o-dimethyl ester phosphorothioic acid]....
Oxydiazon [3-[2,4-Dichloro-5-(1- 19666-30-9 1/1/95
methylethoxy)phenyl]-5-(1,1-dimethylethyl)-
1,3,4-oxadiazol-2(3H)-one].....
Oxyfluorfen..... 42874-03-3 1/1/95
Ozone..... 10028-15-6 1/1/95
Paraldehyde..... 123-63-7 1/1/94
Paraquat dichloride..... 1910-42-5 1/1/95
Parathion [Phosphorothioic acid, O,O-diethyl- 56-38-2 1/1/87
O-(4-nitrophenyl) ester].....
Pebulate [Butylethylcarbamothioic acid S- 1114-71-2 1/1/95
propyl ester].....
Pendimethalin [N-(1-Ethylpropyl)-3,4-dimethyl- 40487-42-1 1/1/95
2,6-dinitrobenzenamine].....
Pentachlorobenzene..... 00608-93-5 1/00
Pentachloroethane..... 76-01-7 1/1/94
Pentachlorophenol (PCP)..... 87-86-5 1/1/87
Pentobarbital sodium..... 57-33-0 1/1/95
Peracetic acid..... 79-21-0 1/1/87
Perchloromethyl mercaptan..... 594-42-3 1/1/95
Permethrin [3-(2,2-Dichloroethenyl)-2,2- 52645-53-1 1/1/95
dimethylcyclopropanecarboxylic acid, (3-
phenoxyphenyl)methyl ester].....
Phenanthrene..... 85-01-8 1/1/95
Phenol..... 108-95-2 1/1/87
Phenothrin [2,2-Dimethyl-3-(2-methyl-1- 26002-80-2 1/1/95
propenyl)cyclopropanecarboxylic acid (3-

phenoxyphenyl)methyl ester].....
p-Phenylenediamine..... 106-50-3 1/1/87
1,2-Phenylenediamine..... 95-54-5 1/1/95
1,3-Phenylenediamine..... 108-45-2 1/1/95
1,2-Phenylenediamine dihydrochloride..... 615-28-1 1/1/95
1,4-Phenylenediamine dihydrochloride..... 624-18-0 1/1/95
2-Phenylphenol..... 90-43-7 1/1/87
Phenytoin..... 57-41-0 1/1/95
Phosgene..... 75-44-5 1/1/87
Phosphine..... 7803-51-2 1/1/95
Phosphorus (yellow or white)..... 7723-14-0 1/1/87
Phthalic anhydride..... 85-44-9 1/1/87
Picloram..... 1918-02-1 1/1/95
Picric acid..... 88-89-1 1/1/87
Piperonyl butoxide..... 51-03-6 1/1/95
Pirimiphos methyl [O-(2-(Diethylamino)-6- 29232-93-7 1/1/95
methyl-4-pyrimidinyl)-O,O-
dimethylphosphorothioate].....
Polychlorinated biphenyls (PCBs)..... 1336-36-3 1/1/87
Potassium bromate..... 7758-01-2 1/1/95
Potassium dimethyldithiocarbamate..... 128-03-0 1/1/95
Potassium N-methyldithiocarbamate..... 137-41-7 1/1/95
Profenofos [O-(4-Bromo-2-chlorophenyl)-O- 41198-08-7 1/1/95
ethyl-S-propyl phosphorothioate].....
Prometryn [N,N'-Bis(1-methylethyl)-6- 7287-19-6 1/1/95
methylthio-1,3,5-triazine-2,4- diamine].....
Pronamide..... 23950-58-5 1/1/94
Propachlor [2-Chloro-N-(1-methylethyl)-N- 1918-16-7 1/1/95
phenylacetamide].....
Propane sultone..... 1120-71-4 1/1/87
Propanil [N-(3,4-Dichlorophenyl)propanamide]. 709-98-8 1/1/95
Propargite..... 2312-35-8 1/1/95
Propargyl alcohol..... 107-19-7 1/1/95
Propetamphos [3- 31218-83-4 1/1/95
[[(Ethylamino)methoxyphosphinothioyl]oxy]-2-
butenoic acid, 1-methylethyl ester].....
Propiconazole [1-[2-(2,4-Dichlorophenyl)-4- 60207-90-1 1/1/95
propyl-1,3-dioxolan-2-yl]- methyl-1H-1,2,4,-
triazole].....
beta-Propiolactone..... 57-57-8 1/1/87
Propionaldehyde..... 123-38-6 1/1/87
Propoxur [Phenol, 2-(1-methylethoxy)-, 114-26-1 1/1/87

methylcarbamate].....
Propylene (Propene)..... 115-07-1 1/1/87
Propyleneimine..... 75-55-8 1/1/87
Propylene oxide..... 75-56-9 1/1/87
Pyridine..... 110-86-1 1/1/87
Quinoline..... 91-22-5 1/1/87
Quinone..... 106-51-4 1/1/87
Quintozene [Pentachloronitrobenzene]..... 82-68-8 1/1/87
Quizalofop-ethyl [2-[4-[(6-Chloro-2- 76578-14-8 1/1/95
quinoxalinyl)oxy]phenoxy]propanoic acid
ethyl ester].....
Resmethrin [[5-(Phenylmethyl)-3- 10453-86-8 1/1/95
furanyl]methyl 2,2-dimethyl-3-(2-methyl-1-
propenyl)cyclopropanecarboxylate]].....
Saccharin (only persons who manufacture are 81-07-2 1/1/87
subject, no supplier notification) [1,2-
Benzisothiazol-3(2H)-one,1,1-dioxide].....
Safrole..... 94-59-7 1/1/87
Selenium..... 7782-49-2 1/1/87
Sethoxydim [2-[1-(Ethoxyimino)butyl]-5-[2- 74051-80-2 1/1/95
(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-
one].....
Silver..... 7440-22-4 1/1/87
Simazine..... 122-34-9 1/1/95
Sodium azide..... 26628-22-8 1/1/95
Sodium dicamba [3,6-Dichloro-2-methoxybenzoic 1982-69-0 1/1/95
acid, sodium salt].....
Sodium dimethyldithiocarbamate..... 128-04-1 1/1/95
Sodium fluoroacetate..... 62-74-8 1/1/95
Sodium nitrite..... 7632-00-0 1/1/95
Sodium pentachlorophenate..... 131-52-2
Sodium o-phenylphenoxide..... 132-27-4 1/1/95
Styrene..... 100-42-5 1/1/87
Styrene oxide..... 96-09-3 1/1/87
Sulfuric acid (acid aerosols including mists, 7664-93-9 1/1/87
vapors, gas, fog, and other airborne forms
of any particle size).....
Sulfuryl fluoride [Vikane]..... 2699-79-8 1/1/95
Sulprofos [O-Ethyl O-[4- 35400-43-2 1/1/95
(methylthio)phenyl]phosphorodithioic acid S-
propyl ester].....
Tebuthiuron [N-[5-(1,1-Dimethylethyl)-1,3,4- 34014-18-1 1/1/95

thiadiazol-2-yl)-N,N'-dimethylurea].....
Temephos..... 3383-96-8 1/1/95
Terbacil [5-Chloro-3-(1,1-dimethylethyl)-6- 5902-51-2 1/1/95
methyl-2,4(1H,3H)-pyrimidinedione].....
Tetrabromobisphenol A..... 00079-94-7 1/00
1,1,1,2-Tetrachloroethane..... 630-20-6 1/1/94
1,1,2,2-Tetrachloroethane..... 79-34-5 1/1/87
Tetrachloroethylene (Perchloroethylene)..... 127-18-4 1/1/87
1,1,1,2-Tetrachloro-2-fluoroethane (HCFC- 354-11-0 1/1/95
121a).....
1,1,2,2-Tetrachloro-1-fluoroethane (HCFC-121) 354-14-3 1/1/95
Tetrachlorvinphos [Phosphoric acid, 2-chloro- 961-11-5 1/1/87
1-(2,4,5-trichlorophenyl)ethenyl dimethyl
ester].....
Tetracycline hydrochloride..... 64-75-5 1/1/95
Tetramethrin [2,2-Dimethyl-3-(2-methyl-1- 7696-12-0 1/1/95
propenyl)cyclopropanecarboxylic acid
(1,3,4,5,6,7-hexahydro-1,3-dioxo-2H-isoindol-
2-yl)methyl ester].....
Thallium..... 7440-28-0 1/1/87
Thiabendazole [2-(4-Thiazolyl)-1H- 148-79-8 1/1/95
benzimidazole].....
Thioacetamide..... 62-55-5 1/1/87
Thiobencarb [Carbamic acid, diethylthio-, s- 28249-77-6 1/1/95
(p-chlorobenzyl)].....
4,4'-Thiodianiline..... 139-65-1 1/1/87
Thiodicarb..... 59669-26-0 1/1/95
Thiophanate ethyl [[1,2- 23564-06-9 1/1/95
Phenylenebis(iminocarbonothioyl)]biscarbamic
acid diethyl ester].....
Thiophanate-methyl..... 23564-05-8 1/1/95
Thiosemicarbazide..... 79-19-6 1/1/95
Thiourea..... 62-56-6 1/1/87
Thiram..... 137-26-8 1/1/94
Thorium dioxide..... 1314-20-1 1/1/87
Titanium tetrachloride..... 7550-45-0 1/1/87
Toluene..... 108-88-3 1/1/87
Toluene-2,4-diisocyanate..... 584-84-9 1/1/87
Toluene-2,6-diisocyanate..... 91-08-7 1/1/87
Toluenediisocyanate (mixed isomers)..... 26471-62-5 1/1/90
o-Toluidine..... 95-53-4 1/1/87
o-Toluidine hydrochloride..... 636-21-5 1/1/87

Toxaphene..... 8001-35-2 1/1/87
Triadimefon [1-(4-Chlorophenoxy)-3,3-dimethyl- 43121-43-3 1/1/95
1-(1H-1,2,4-triazol-1-yl)-2-butanone].....
Triallate..... 2303-17-5 1/1/95
Triaziquone [2,5-Cyclohexadiene-1,4- 68-76-8 1/1/87
dione,2,3,5-tris(1-aziridinyl)-].....
Tribenuron methyl [2-(((((4-Methoxy-6-methyl- 101200-48-0 1/1/95
1,3,5-triazin-2-yl)-
methylamino)carbonyl)amino)sulfonyl)-,
methyl ester].....
Tributyltin fluoride..... 1983-10-4 1/1/95
Tributyltin methacrylate..... 2155-70-6 1/1/95
S,S,S-Tributyltrithiophosphate (DEF)..... 78-48-8 1/1/95
Trichlorfon [Phosphonic acid, (2,2,2- 52-68-6 1/1/87
trichloro-1-hydroxyethyl)-, dimethyl ester].
Trichloroacetyl chloride..... 76-02-8 1/1/95
1,2,4-Trichlorobenzene..... 120-82-1 1/1/87
1,1,1-Trichloroethane (Methyl chloroform).... 71-55-6 1/1/87
1,1,2-Trichloroethane..... 79-00-5 1/1/87
Trichloroethylene..... 79-01-6 1/1/87
Trichlorofluoromethane (CFC-11)..... 75-69-4 7/8/90
2,4,5-Trichlorophenol..... 95-95-4 1/1/87
2,4,6-Trichlorophenol..... 88-06-2 1/1/87
1,2,3-Trichloropropane..... 96-18-4 1/1/95
Triclopyr, triethylammonium salt..... 57213-69-1 1/1/95
Triethylamine..... 121-44-8 1/1/95
Triforine [N,N'-[1,4-Piperazinediyl-bis(2,2,2- 26644-46-2 1/1/95
trichloroethylidene)] bisformamide].....
Trifluralin [Benzeneamine, 2,6-dinitro-N,N- 1582-09-8 1/1/87
dipropyl-4-(trifluoromethyl)-1].....
1,2,4-Trimethylbenzene..... 95-63-6 1/1/87
2,3,5-Trimethylphenyl methylcarbamate..... 2655-15-4 1/1/95
Triphenyltin chloride..... 639-58-7 1/1/95
Triphenyltin hydroxide..... 76-87-9 1/1/95
Tris(2,3-dibromopropyl) phosphate..... 126-72-7 1/1/87
Trypan blue..... 72-57-1 1/1/94
Urethane (Ethyl carbamate)..... 51-79-6 1/1/87
Vanadium (except when contained in an alloy). 7440-62-2 1/00
Vinclozolin [3-(3,5-Dichlorophenyl)-5-ethenyl- 50471-44-8 1/1/95
5-methyl-2,4- oxazolidinedione].....
Vinyl acetate..... 108-05-4 1/1/87
Vinyl bromide..... 593-60-2 1/1/87

Vinyl chloride..... 75-01-4 1/1/87
Vinylidene chloride..... 75-35-4 1/1/87
Xylene (mixed isomers)..... 1330-20-7 1/1/87
m-Xylene..... 108-38-3 1/1/87
o-Xylene..... 95-47-6 1/1/87
p-Xylene..... 106-42-3 1/1/87
2,6-Xylidine..... 87-62-7 1/1/87
Zinc (fume or dust)..... 7440-66-6 1/1/87
Zineb [Carbamodithioic acid, 1,2- ethanediylbis-, zinc complex]..... 12122-67-7 1/1/87

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*Note: Ammonium nitrate (solution) is removed from this listing; the removal is effective July 2, 1995, for the 1995 reporting year.

*Note: The listing of 2,2-dibromo-3-nitrilopropionamide (DBNPA)(CAS No. 10222-01-2) is stayed. The stay will remain in effect until further administrative action is taken.

(b) CAS Number listing.

CAS No.	Chemical name	Effective date
50-00-0	Formaldehyde.....	1/1/87
51-03-6	Piperonyl butoxide.....	1/1/95
51-21-8	Fluorouracil (5-Fluorouracil).....	1/1/95
51-28-5	2,4-Dinitrophenol.....	1/1/87
51-75-2	Nitrogen mustard [2-Chloro-N-(2-chloroethyl)-N-methylethanamine].....	1/1/87
51-79-6	Urethane (Ethyl carbamate).....	1/1/87
52-68-6	Trichlorfon [Phosphonic acid, (2,2,2-trichloro-1-hydroxyethyl)-dimethyl ester]...	1/1/87
52-85-7	Famphur.....	1/1/95
53-96-3	2-Acetylaminofluorene.....	1/1/87
55-18-5	N-Nitrosodiethylamine.....	1/1/87
55-21-0	Benzamide.....	1/1/87
55-38-9	Fenthion [O,O-Dimethyl O-[3-methyl-4-(methylthio)phenyl] ester, phosphorothioic acid].....	1/1/95
55-63-0	Nitroglycerin.....	1/1/87

56-23-5 Carbon tetrachloride..... 1/1/87
56-35-9 Bis(tributyltin) oxide..... 1/1/95
56-38-2 Parathion [Phosphorothioic acid, 0,0-diethyl- 1/1/87
0-(4-nitrophenyl)ester].....
57-14-7 1,1-Dimethyl hydrazine..... 1/1/87
57-33-0 Pentobarbital sodium..... 1/1/95
57-41-0 Phenytoin..... 1/1/95
57-57-8 beta-Propiolactone..... 1/1/87
57-74-9 Chlordane [4,7-Methanoindan, 1,2,4,5,6,7,8,8- 1/1/87
octachloro-2,3,3a,4,7,7a-hexahydro-].....
58-89-9 Lindane [Cyclohexane, 1,2,3,4,5,6-hexachloro- 1/1/87
(1.alpha.,2.alpha.,3.beta.,4.alpha.,5.alpha.
,6.beta.)-].....
59-89-2 N-Nitrosomorpholine..... 1/1/87
60-09-3 4-Aminoazobenzene..... 1/1/87
60-11-7 4-Dimethylaminoazobenzene..... 1/1/87
60-34-4 Methyl hydrazine..... 1/1/87
60-35-5 Acetamide..... 1/1/87
60-51-5 Dimethoate..... 1/1/95
61-82-5 Amitrole..... 1/1/94
62-53-3 Aniline..... 1/1/87
62-55-5 Thioacetamide..... 1/1/87
62-56-6 Thiourea..... 1/1/87
62-73-7 Dichlorvos [Phosphoric acid, 2,2- 1/1/87
dichloroethenyl dimethyl ester].....
62-74-8 Sodium fluoroacetate..... 1/1/95
62-75-9 N-Nitrosodimethylamine..... 1/1/87
63-25-2 Carbaryl [1-Naphthalenol, methylcarbamate]... 1/1/87
64-18-6 Formic acid..... 1/1/94
64-67-5 Diethyl sulfate..... 1/1/87
64-75-5 Tetracycline hydrochloride..... 1/1/95
67-56-1 Methanol..... 1/1/87
67-63-0 Isopropyl alcohol (only persons who 1/1/87
manufacture by the strong acid process are
subject, supplier notification not
required.).....
67-66-3 Chloroform..... 1/1/87
67-72-1 Hexachloroethane..... 1/1/87
68-12-2 N,N-Dimethylformamide..... 1/1/95
68-76-8 Triaziquone [2,5-Cyclohexadiene-1,4- 1/1/87
dione,2,3,5-tris(1-aziridinyl)-].....
70-30-4 Hexachlorophene..... 1/1/94

71-36-3 n- Butyl alcohol..... 1/1/87
71-43-2 Benzene..... 1/1/87
71-55-6 1,1,1-Trichloroethane (Methyl chloroform).... 1/1/87
72-43-5 Methoxychlor [Benzene, 1,1'-(2,2,2,- 1/1/87
trichloroethylidene)bis [4-methoxy-].....
72-57-1 Trypan blue..... 1/1/94
74-83-9 Bromomethane (Methyl bromide)..... 1/1/87
74-85-1 Ethylene..... 1/1/87
74-87-3 Chloromethane (Methyl chloride)..... 1/1/87
74-88-4 Methyl iodide..... 1/1/87
74-90-8 Hydrogen cyanide..... 1/1/87
74-93-1 Methyl mercaptan..... 1/1/94
74-95-3 Methylene bromide..... 1/1/87
75-00-3 Chloroethane (Ethyl chloride)..... 1/1/87
75-01-4 Vinyl chloride..... 1/1/87
75-05-8 Acetonitrile..... 1/1/87
75-07-0 Acetaldehyde..... 1/1/87
75-09-2 Dichloromethane (Methylene chloride)..... 1/1/87
75-15-0 Carbon disulfide..... 1/1/87
75-21-8 Ethylene oxide..... 1/1/87
75-25-2 Bromoform (Tribromomethane)..... 1/1/87
75-27-4 Dichlorobromomethane..... 1/1/87
75-34-3 Ethylidene dichloride..... 1/1/94
75-35-4 Vinylidene chloride..... 1/1/87
75-43-4 Dichlorofluoromethane (HCFC-21)..... 1/1/95
75-44-5 Phosgene..... 1/1/87
75-45-6 Chlorodifluoromethane (HCFC-22)..... 1/1/94
75-55-8 Propyleneimine..... 1/1/87
75-56-9 Propylene oxide..... 1/1/87
75-63-8 Bromotrifluoromethane (Halon 1301)..... 7/8/90
75-65-0 tert-Butyl alcohol..... 1/1/87
75-68-3 1-Chloro-1,1-difluoroethane (HCFC-142b)..... 1/1/94
75-69-4 Trichlorofluoromethane (CFC-11)..... 7/8/90
75-71-8 Dichlorodifluoromethane (CFC-12)..... 7/8/90
75-72-9 Chlorotrifluoromethane (CFC-13)..... 1/1/95
75-86-5 2-Methyllactonitrile..... 1/1/95
75-88-7 2-Chloro-1,1,1-trifluoroethane (HCFC-133a)... 1/1/95
76-01-7 Pentachloroethane..... 1/1/94
76-02-8 Trichloroacetyl chloride..... 1/1/95
76-06-2 Chloropicrin..... 1/1/95
76-13-1 Freon-113..... 1/1/87
76-14-2 Dichlorotetrafluoroethane (CFC-114)..... 7/8/90

76-15-3 (Mono)chloropentafluoroethane (CFC-115)..... 7/8/90
76-44-8 Heptachlor [1,4,5,6,7,8,8-Heptachloro- 1/1/87
3a,4,7,7a-tetrahydro-4,7-methano-1H-indene].
76-87-9 Triphenyltin hydroxide..... 1/1/95
77-47-4 Hexachlorocyclopentadiene..... 1/1/87
77-73-6 Dicyclopentadiene..... 1/1/95
77-78-1 Dimethyl sulfate..... 1/1/87
78-48-8 S,S,S-Tributyltrithiophosphate (DEF)..... 1/1/95
78-84-2 Isobutyraldehyde..... 1/1/87
78-87-5 1,2-Dichloropropane..... 1/1/87
78-88-6 2,3-Dichloropropene..... 1/1/90
78-92-2 sec- Butyl alcohol..... 1/1/87
78-93-3 Methyl ethyl ketone..... 1/1/87
79-00-5 1,1,2-Trichloroethane..... 1/1/87
79-01-6 Trichloroethylene..... 1/1/87
79-06-1 Acrylamide..... 1/1/87
79-10-7 Acrylic acid..... 1/1/87
79-11-8 Chloroacetic acid..... 1/1/87
79-19-6 Thiosemicarbazide..... 1/1/95
79-21-0 Peracetic acid..... 1/1/87
79-22-1 Methyl chlorocarbonate..... 1/1/94
79-34-5 1,1,2,2-Tetrachloroethane..... 1/1/87
79-44-7 Dimethylcarbamyl chloride..... 1/1/87
79-46-9 2-Nitropropane..... 1/1/87
80-05-7 4,4'-Isopropylidenediphenol..... 1/1/87
80-15-9 Cumene hydroperoxide..... 1/1/87
80-62-6 Methyl methacrylate..... 1/1/87
81-07-2 Saccharin (only persons who manufacture are 1/1/87
subject, no supplier notification) [1,2-
Benzisothiazol-3(2H)-one,1,1-dioxide].....
81-88-9 C.I. Food Red 15..... 1/1/87
82-28-0 1-Amino-2-methylanthraquinone..... 1/1/87
82-68-8 Quintozene [Pentachloronitrobenzene]..... C12
84-74-2 Dibutyl phthalate..... 1/1/87
85-01-8 Phenanthrene..... 1/1/95
85-44-9 Phthalic anhydride..... 1/1/87
86-30-6 N-Nitrosodiphenylamine..... 1/1/87
87-62-7 2,6-Xylidine..... 1/1/87
87-68-3 Hexachloro-1,3-butadiene..... 1/1/87
87-86-5 Pentachlorophenol (PCP)..... 1/1/87
88-06-2 2,4,6-Trichlorophenol..... 1/1/87
88-75-5 2-Nitrophenol..... 1/1/87

88-85-7 Dinitrobutyl phenol (Dinoseb)..... 1/1/95
88-89-1 Picric acid..... 1/1/87
90-04-0 o-Anisidine..... 1/1/87
90-43-7 2-Phenylphenol..... 1/1/87
90-94-8 Michler's ketone..... 1/1/87
91-08-7 Toluene-2,6-diisocyanate..... 1/1/87
91-20-3 Naphthalene..... 1/1/87
91-22-5 Quinoline..... 1/1/87
91-59-8 beta-Naphthylamine..... 1/1/87
91-94-1 3,3-Dichlorobenzidine..... 1/1/87
92-52-4 Biphenyl..... 1/1/87
92-67-1 4-Aminobiphenyl..... 1/1/87
92-87-5 Benzidine..... 1/1/87
92-93-3 4-Nitrobiphenyl..... 1/1/87
93-65-2 Mecoprop..... 1/1/95
94-11-1 2,4-D isopropyl ester..... 1/1/95
94-36-0 Benzoyl peroxide..... 1/1/87
94-58-6 Dihydrosafrole..... 1/1/94
94-59-7 Safrole..... 1/1/87
94-74-6 Methoxone (4-Chloro-2-methylphenoxy) acetic acid (MCPA)..... 1/1/95
94-75-7 2,4-D [Acetic acid, (2,4-dichlorophenoxy)-].. 1/1/87
94-80-4 2,4-D butyl ester..... 1/1/95
94-82-6 2,4-DB..... 1/1/95
95-47-6 o-Xylene..... 1/1/87
95-48-7 o-Cresol..... 1/1/87
95-50-1 1,2-Dichlorobenzene..... 1/1/87
95-53-4 o-Toluidine..... 1/1/87
95-54-5 1,2-Phenylenediamine..... 1/1/95
95-63-6 1,2,4-Trimethylbenzene..... 1/1/87
95-69-2 p-Chloro-o-toluidine..... 1/1/95
95-80-7 2,4-Diaminotoluene..... 1/1/87
95-95-4 2,4,5-Trichlorophenol..... 1/1/87
96-09-3 Styrene oxide..... 1/1/87
96-12-8 1,2-Dibromo-3-chloropropane (DBCP)..... 1/1/87
96-18-4 1,2,3-Trichloropropane..... 1/1/95
96-33-3 Methyl acrylate..... 1/1/87
96-45-7 Ethylene thiourea..... 1/1/87
97-23-4 Dichlorophene [2,2'-Methylene-bis(4-chlorophenol)]..... 1/1/95
97-56-3 C.I. Solvent Yellow 3..... 1/1/87
98-07-7 Benzoic trichloride (Benzotrichloride)..... 1/1/87

98-82-8 Cumene..... 1/1/87
98-86-2 Acetophenone..... 1/1/94
98-87-3 Benzal chloride..... 1/1/87
98-88-4 Benzoyl chloride..... 1/1/87
98-95-3 Nitrobenzene..... 1/1/87
99-30-9 Dichloran [2,6-Dichloro-4-nitroaniline]..... 1/1/95
99-55-8 5-Nitro-o-toluidine..... 1/1/94
99-59-2 5-Nitro-o-anisidine..... 1/1/87
99-65-0 m-Dinitrobenzene..... 1/1/90
100-01-6 p-Nitroaniline..... 1/1/95
100-02-7 4-Nitrophenol..... 1/1/87
100-25-4 p-Dinitrobenzene..... 1/1/90
100-41-4 Ethylbenzene..... 1/1/87
100-42-5 Styrene..... 1/1/87
100-44-7 Benzyl chloride..... 1/1/87
100-75-4 N-Nitrosopiperidine..... 1/1/87
101-05-3 Anilazine [4,6-dichloro-N-(2-chlorophenyl)- 1/1/95
1,3,5-triazin-2-amine].....
101-14-4 4,4'-Methylenebis(2-chloroaniline) (MBOCA)... 1/1/87
101-61-1 4,4'-Methylenebis(N,N-dimethyl)benzenamine... 1/1/87
101-68-8 Methylenebis(phenylisocyanate) (MDI)..... 1/1/87
101-77-9 4,4'-Methylenedianiline..... 1/1/87
101-80-4 4,4'-Diaminodiphenyl ether..... 1/1/87
101-90-6 Diglycidyl resorcinol ether..... 1/1/95
104-12-1 p-Chlorophenyl isocyanate..... 1/1/95
104-94-9 p-Anisidine..... 1/1/87
105-67-9 2,4-Dimethylphenol..... 1/1/87
106-42-3 p-Xylene..... 1/1/87
106-44-5 p-Cresol..... 1/1/87
106-46-7 1,4-Dichlorobenzene..... 1/1/87
106-47-8 p-Chloroaniline..... 1/1/95
106-50-3 p-Phenylenediamine..... 1/1/87
106-51-4 Quinone..... 1/1/87
106-88-7 1,2-Butylene oxide..... 1/1/87
106-89-8 Epichlorohydrin..... 1/1/87
106-93-4 1,2-Dibromoethane (Ethylene dibromide)..... 1/1/87
106-99-0 1,3-Butadiene..... 1/1/87
107-02-8 Acrolein..... 1/1/87
107-05-1 Allyl chloride..... 1/1/87
107-06-2 1,2-Dichloroethane (Ethylene dichloride)..... 1/1/87
107-11-9 Allylamine..... 1/1/95
107-13-1 Acrylonitrile..... 1/1/87

107-18-6 Allyl alcohol..... 1/1/90
107-19-7 Propargyl alcohol..... 1/1/95
107-21-1 Ethylene glycol..... 1/1/87
107-30-2 Chloromethyl methyl ether..... 1/1/87
108-05-4 Vinyl acetate..... 1/1/87
108-10-1 Methyl isobutyl ketone..... 1/1/87
108-31-6 Maleic anhydride..... 1/1/87
108-38-3 m-Xylene..... 1/1/87
108-39-4 m-Cresol..... 1/1/87
108-45-2 1,3-Phenylenediamine..... 1/1/95
108-60-1 Bis(2-chloro-1-methylethyl)ether..... 1/1/87
108-88-3 Toluene..... 1/1/87
108-90-7 Chlorobenzene..... 1/1/87
108-93-0 Cyclohexanol..... 1/1/95
108-95-2 Phenol..... 1/1/87
109-06-8 2-Methylpyridine..... 1/1/94
109-77-3 Malononitrile..... 1/1/94
109-86-4 2-Methoxyethanol..... 1/1/87
110-54-3 n-Hexane..... 1/1/95
110-57-6 trans-1,4-Dichloro-2-butene..... 1/1/95
110-80-5 2-Ethoxyethanol..... 1/1/87
110-82-7 Cyclohexane..... 1/1/87
110-86-1 Pyridine..... 1/1/87
111-42-2 Diethanolamine..... 1/1/87
111-44-4 Bis(2-chloroethyl) ether..... 1/1/87
111-91-1 Bis(2-chloroethoxy)methane..... 1/1/94
114-26-1 Propoxur [Phenol, 2-(1-methylethoxy)-, methylcarbamate]..... 1/1/87
115-07-1 Propylene (Propene)..... 1/1/87
115-28-6 Chlorendic acid..... 1/1/95
115-32-2 Dicofol [Benzenemethanol, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-(trichloromethyl)-]... 1/1/87
116-06-3 Aldicarb..... 1/1/95
117-79-3 2-Aminoanthraquinone..... 1/1/87
117-81-7 Di(2-ethylhexyl) phthalate (DEHP)..... 1/1/87
118-74-1 Hexachlorobenzene..... 1/1/87
119-90-4 3,3'-Dimethoxybenzidine..... 1/1/87
119-93-7 3,3'-Dimethylbenzidine (o-Tolidine)..... 1/1/87
120-12-7 Anthracene..... 1/1/87
120-36-5 2,4-DP..... 1/1/95
120-58-1 Isosafrole..... 1/1/90
120-71-8 p-Cresidine..... 1/1/87

120-80-9 Catechol..... 1/1/87
120-82-1 1,2,4-Trichlorobenzene..... 1/1/87
120-83-2 2,4-Dichlorophenol..... 1/1/87
121-14-2 2,4-Dinitrotoluene..... 1/1/87
121-44-8 Triethylamine..... 1/1/95
121-69-7 N,N-Dimethylaniline..... 1/1/87
121-75-5 Malathion..... 1/1/95
122-34-9 Simazine..... 1/1/95
122-39-4 Diphenylamine..... 1/1/95
122-66-7 1,2-Diphenylhydrazine (Hydrazobenzene)..... 1/1/87
123-31-9 Hydroquinone..... 1/1/87
123-38-6 Propionaldehyde..... 1/1/87
123-63-7 Paraldehyde..... 1/1/94
123-72-8 Butyraldehyde..... 1/1/87
123-91-1 1,4-Dioxane..... 1/1/87
124-40-3 Dimethylamine..... 1/1/95
124-73-2 Dibromotetrafluoroethane (Halon 2402)..... 7/8/90
126-72-7 Tris-2,3-dibromopropyl) phosphate..... 1/1/87
126-98-7 Methacrylonitrile..... 1/1/94
126-99-8 Chloroprene..... 1/1/87
127-18-4 Tetrachloroethylene (Perchloroethylene)..... 1/1/87
128-03-0 Potassium dimethyldithiocarbamate..... 1/1/95
128-04-1 Sodium dimethyldithiocarbamate..... 1/1/95
128-66-5 C.I. Vat Yellow 4..... 1/1/87
131-11-3 Dimethyl phthalate..... 1/1/87
131-52-2 Sodium pentachlorophenate..... 1/1/95
132-27-4 Sodium o-phenylphenoxide..... 1/1/95
132-64-9 Dibenzofuran..... 1/1/87
133-06-2 Captan [1H-Isoindole-1,3(2H)-dione,3a,4,7,7a- tetrahydro-2-[(trichloromethyl)thio]-]..... 1/1/87
133-07-3 Folpet..... 1/1/95
133-90-4 Chloramben [Benzoic acid, 3-amino-2,5- dichloro-]..... 1/1/87
134-29-2 o-Anisidine hydrochloride..... 1/1/87
134-32-7 alpha-Naphthylamine..... 1/1/87
135-20-6 Cupferron [Benzeneamine, N-hydroxy-N-nitroso, ammonium salt]..... 1/1/87
136-45-8 Dipropyl isocinchomeronate..... 1/1/95
137-26-8 Thiram..... 1/1/94
137-41-7 Potassium n-methyldithiocarbamate..... 1/1/95
137-42-8 Metham Sodium..... 1/1/95
138-93-2 Disodium cyanodithioimidocarbonate..... 1/1/95

139-13-9 Nitrilotriacetic acid..... 1/1/87
139-65-1 4,4'-Thiodianiline..... 1/1/87
140-88-5 Ethyl acrylate..... 1/1/87
141-32-2 Butyl acrylate..... 1/1/87
142-59-6 Nabam..... 1/1/95
148-79-8 Thiabendazole [2-(4-Thiazolyl)-1H-benzimidazole]..... 1/1/95
149-30-4 2-Mercaptobenzothiazole..... 1/1/95
150-50-5 Merphos..... 1/1/95
150-68-5 Monuron..... 1/1/95
151-56-4 Ethyleneimine (Aziridine)..... 1/1/87
156-10-5 p-Nitrosodiphenylamine..... 1/1/87
156-62-7 Calcium cyanamide..... 1/1/87
298-00-0 Methyl parathion..... 1/1/95
300-76-5 Naled..... 1/1/95
301-12-2 Oxydemeton methyl [s-(2-(Ethylsulfinyl)ethyl)o,o-dimethyl ester phosphorothioic acid]..... 1/1/95
302-01-2 Hydrazine..... 1/1/87
306-83-2 2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123) 1/1/94
309-00-2 Aldrin[1,4:5,8-Dimethanonaphthalene,1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-(1.alpha.,4.alpha.,4a.beta.,5.alpha.,8.alpha.,8a.beta.)-]..... 1/1/87
314-40-9 Bromacil (5-Bromo-6-methyl-3-(1-methylpropyl)-2,4-(1H,3H)-pyrimidinedione)..... 1/1/95
319-84-6 alpha-Hexachlorocyclohexane..... 1/1/95
330-54-1 Diuron..... 1/1/95
330-55-2 Linuron..... 1/1/95
333-41-5 Diazinon..... 1/1/95
334-88-3 Diazomethane..... 1/1/87
353-59-3 Bromochlorodifluoromethane (Halon 1211)..... 7/8/90
354-11-0 1,1,1,2-Tetrachloro-2-fluoroethane (HCFC-121a)..... 1/1/95
354-14-3 1,1,2,2-Tetrachloro-1-fluoroethane (HCFC-121) 1/1/95
354-23-4 1,2-Dichloro-1,1,2-trifluoroethane (HCFC-123a)..... 1/1/94
354-25-6 1-Chloro-1,1,2,2-tetrafluoroethane (HCFC-124a)..... 1/1/94
357-57-3 Brucine..... 1/1/95
422-44-6 1,2-dichloro-1,1,2,3,3-pentafluoropropane 1/1/95

(HCFC-225bb).....
422-48-0 2,3-dichloro-1,1,1,2,3-pentafluoropropane 1/1/95
(HCFC-225ba).....
422-56-0 3,3-dichloro-1,1,1,2,2-pentafluoropropane 1/1/95
(HCFC-225ca).....
431-86-7 1,2-dichloro-1,1,3,3,3-pentafluoropropane 1/1/95
(HCFC-225da).....
460-35-5 3-chloro-1,1,1-trifluoropropane (HCFC-253fb). 1/1/95
463-58-1 Carbonyl sulfide..... 1/1/87
465-73-6 Isodrin..... 1/1/95
492-80-8 C.I. Solvent Yellow 34 (Aurimine)..... 1/1/87
505-60-2 Mustard gas [Ethane, 1,1'-thiobis[2-chloro-]. 1/1/87
507-55-1 1,3-dichloro-1,1,2,2,3-pentafluoropropane 1/1/95
(HCFC-225cb).....
510-15-6 Chlorobenzilate[Benezeneacetic acid, 4-chloro- 1/1/87
.alpha.-(4-chlorophenyl)-.alpha,-hydroxy-,
ethyl ester].....
528-29-0 o-Dinitrobenzene..... 1/1/90
532-27-4 2-Chloroacetophenone..... 1/1/87
533-74-4 Dazomet (Tetrahydro-3,5-dimethyl-2H-1,3,5- 1/1/95
thiadiazine-2-thione).....
534-52-1 4,6-Dinitro-o-cresol..... 1/1/87
540-59-0 1,2-Dichloroethylene..... 1/1/87
541-41-3 Ethyl chloroformate..... 1/1/87
541-53-7 2,4-Dithiobiuret..... 1/1/95
541-73-1 1,3-Dichlorobenzene..... 1/1/87
542-75-6 1,3-Dichloropropylene..... 1/1/87
542-76-7 3-Chloropropionitrile..... 1/1/95
542-88-1 Bis(chloromethyl) ether..... 1/1/87
554-13-2 Lithium carbonate..... 1/1/95
556-61-6 Methyl isothiocyanate [Isothiocyanatomethane] 1/1/95
563-47-3 3-Chloro-2-methyl-1-propene..... 1/1/95
569-64-2 C.I. Basic Green 4..... 1/1/87
594-42-3 Perchloromethyl mercaptan..... 1/1/95
606-20-2 2,6-Dinitrotoluene..... 1/1/87
612-82-8 3,3'-Dimethylbenzidine dihydrochloride (o- 1/1/95
Tolidine dihydrochloride).....
612-83-9 3,3'-Dichlorobenzidine dihydrochloride..... 1/1/95
615-05-4 2,4-Diaminoanisole..... 1/1/87
615-28-1 1,2-Phenylenediamine dihydrochloride..... 1/1/95
621-64-7 N-Nitrosodi-n-propylamine..... 1/1/87
624-18-0 1,4-Phenylenediamine dihydrochloride..... 1/1/95

624-83-9 Methyl isocyanate..... 1/1/87
630-20-6 1,1,1,2-Tetrachloroethane..... 1/1/94
636-21-5 o-Toluidine hydrochloride..... 1/1/87
639-58-7 Triphenyltin chloride..... 1/1/95
680-31-9 Hexamethylphosphoramide..... 1/1/87
684-93-5 N-Nitroso-N-methylurea..... 1/1/87
709-98-8 Propanil [N-(3,4-Dichlorophenyl)propanamide]. 1/1/95
759-73-9 N-Nitroso-N-ethylurea..... 1/1/87
759-94-4 Ethyl dipropylthiocarbamate (EPTC)..... 1/1/95
764-41-0 1,4-Dichloro-2-butene..... 1/1/94
812-04-4 1,1-Dichloro-1,2,2-trifluoroethane (HCFC-123b)..... 1/1/94
834-12-8 Ametryn (N-Ethyl-N'-(1-methylethyl)-6-(methylthio)-1,3,5,-triazine-2,4-diamine)... 1/1/95
842-07-9 C.I. Solvent Yellow 14..... 1/1/87
872-50-4 N-Methyl-2-pyrrolidone..... 1/1/95
924-16-3 N-Nitrosodi-n-butylamine..... 1/1/87
924-42-5 N-Methylolacrylamide..... 1/1/95
957-51-7 Diphenamid..... 1/1/95
961-11-5 Tetrachlorvinphos [Phosphoric acid, 2-chloro-1-(2,4,5-trichlorophenyl)ethenyl dimethyl ester]..... 1/1/87
989-38-8 C.I. Basic Red l..... 1/1/87
1114-71-2 Pebulate [Butylethylcarbamo-thioic acid S-propyl ester]..... 1/1/95
1120-71-4 Propane sultone..... 1/1/87
1134-23-2 Cycloate..... 1/1/95
1163-19-5 Decabromodiphenyl oxide..... 1/1/87
1313-27-5 Molybdenum trioxide..... 1/1/87
1314-20-1 Thorium dioxide..... 1/1/87
1319-77-3 Cresol (mixed isomers)..... 1/1/87
1320-18-9 2,4-D propylene glycol butyl ether ester..... 1/1/95
1330-20-7 Xylene (mixed isomers)..... 1/1/87
1332-21-4 Asbestos (friable)..... 1/1/87
1335-87-1 Hexachloronaphthalene..... 1/1/87
1336-36-3 Polychlorinated biphenyls (PCBs)..... 1/1/87
1344-28-1 Aluminum oxide (fibrous forms)..... 1/1/87
1464-53-5 Diepoxybutane..... 1/1/87
1563-66-2 Carbofuran..... 1/1/95
1582-09-8 Trifluralin [Benzeneamine, 2,6-dinitro-N,N-dipropyl-4-(trifluoromethyl)-]..... 1/1/87
1634-04-4 Methyl tert-butyl ether..... 1/1/87

1649-08-7 1,2-dichloro-1,1-difluoroethane (HCFC-132b).. 1/1/95
1689-84-5 Bromoxynil (3,5-Dibromo-4- 1/1/95
hydroxybenzonitrile).....
1689-99-2 Bromoxynil octanoate (Octanoic acid, 2,6- 1/1/95
dibromo-4-cyanophenyl ester).....
1717-00-6 1,1-Dichloro-1-fluoroethane (HCFC-141b)..... 1/1/94
1836-75-5 Nitrofen [Benzene, 2,4-dichloro-1-(4- 1/1/87
nitrophenoxy)-].....
1861-40-1 Benfluralin(N-Butyl-N-ethyl-2,6-dinitro-4- 1/1/95
(trifluoromethyl)benzenamine).....
1897-45-6 Chlorothalonil [1-3- 1/1/87
Benzenedicarbonitrile,2,4,5,6-tetrachloro-].
1910-42-5 Paraquat dichloride..... 1/1/95
1912-24-9 Atrazine (6-Chloro-N-ethyl-N'-(1-methylethyl)- 1/1/95
1,3,5,-triazine-2,4-diamine).....
1918-00-9 Dicamba (3,6-Dichloro-2-methoxybenzoic acid). 1/1/95
1918-02-1 Picloram..... 1/1/95
1918-16-7 Propachlor [2-Chloro-N-(1-methylethyl)-N- 1/1/95
phenylacetamide].....
1928-43-4 2,4-D 2-ethylhexyl ester..... 1/1/95
1929-73-3 2,4-D butoxyethyl ester..... 1/1/95
1929-82-4 Nitrapyrin (2-Chloro-6- 1/1/95
(trichloromethyl)pyridine).....
1937-37-7 C.I. Direct Black 38..... 1/1/87
1982-69-0 Sodium dicamba [3,6-Dichloro-2-methoxybenzoic 1/1/95
acid, sodium salt].....
1983-10-4 Tributyltin fluoride..... 1/1/95
2032-65-7 Methiocarb..... 1/1/95
2155-70-6 Tributyltin methacrylate..... 1/1/95
2164-07-0 Dipotassium endothall [7- 1/1/95
Oxabicyclo(2.2.1)heptane-2,3-dicarboxylic
acid, dipotassium salt].....
2164-17-2 Fluometuron [Urea, N,N-dimethyl-N'-[3- 1/1/87
(trifluoromethyl)phenyl]-].....
2212-67-1 Molinate (1H-Azepine-1-carbothioic acid, 1/1/95
hexahydro-S-ethyl ester).....
2234-13-1 Octachloronaphthalene..... 1/1/87
2300-66-5 Dimethylamine dicamba..... 1/1/95
2303-16-4 Diallate [Carbamothioic acid, bis(1- 1/1/87
methylethyl)-, S-(2,3-dichloro-2-
propenyl)ester].....
2303-17-5 Triallate..... 1/1/95

2312-35-8 Propargite..... 1/1/95
2439-01-2 Chinomethionat [6-Methyl-1,3-dithiolo[4,5- 1/1/95
b]quinoxalin-2-one].....
2439-10-3 Dodine [Dodecylguanidine monoacetate]..... 1/1/95
2524-03-0 Dimethyl chlorothiophosphate..... 1/1/95
2602-46-2 C.I. Direct Blue 6..... 1/1/87
2655-15-4 2,3,5-Trimethylphenyl methylcarbamate..... 1/1/95
2699-79-8 Sulfuryl Fluoride [Vikane]..... 1/1/95
2702-72-9 2,4-D sodium salt..... 1/1/95
2832-40-8 C.I. Disperse Yellow 3..... 1/1/87
2837-89-0 2-Chloro-1,1,1,2-tetrafluoroethane (HCFC-124) 1/1/94
2971-38-2 2,4-D chlorocrotyl ester..... 1/1/95
3118-97-6 C.I. Solvent Orange 7..... 1/1/87
3383-96-8 Temephos..... 1/1/95
3653-48-3 Methoxone - sodium salt (4-Chloro-2- 1/1/95
methylphenoxy acetate sodium salt).....
3761-53-3 C.I. Food Red 5..... 1/1/87
4080-31-3 1-(3-Chloroallyl)-3,5,7-triaza-1- 1/1/95
azoniaadamantane chloride.....
4170-30-3 Crotonaldehyde..... 1/1/95
4549-40-0 N-Nitrosomethylvinylamine..... 1/1/87
4680-78-8 C.I. Acid Green 3..... 1/1/87
5234-68-4 Carboxin (5,6-Dihydro-2-methyl-N-phenyl-1,4- 1/1/95
oxathiin-3-carboxamide).....
5598-13-0 Chlorpyrifos methyl [O,O-dimethyl-O-(3,5,6- 1/1/95
trichloro-2-pyridyl)phosphorothioate].....
5902-51-2 Terbacil [5-Chloro-3-(1,1-dimethylethyl)-6- 1/1/95
methyl-2,4-(1H,3H)-pyrimidinedione].....
6459-94-5 C.I. Acid Red 114..... 1/1/95
6484-52-2 Ammonium nitrate (solution)..... 1/1/87*
7287-19-6 Prometryn [N,N'-Bis(1-methylethyl)-6- 1/1/95
methylthio-1,3,5-triazine-2,4-diamine].....
7429-90-5 Aluminum (fume or dust)..... 1/1/87
7439-92-1 Lead..... 1/1/87
7439-96-5 Manganese..... 1/1/87
7439-97-6 Mercury..... 1/1/87
7440-02-0 Nickel..... 1/1/87
7440-22-4 Silver..... 1/1/87
7440-28-0 Thallium..... 1/1/87
7440-36-0 Antimony..... 1/1/87
7440-38-2 Arsenic..... 1/1/87
7440-39-3 Barium..... 1/1/87

7440-41-7	Beryllium.....	1/1/87
7440-43-9	Cadmium.....	1/1/87
7440-47-3	Chromium.....	1/1/87
7440-48-4	Cobalt.....	1/1/87
7440-50-8	Copper.....	1/1/87
7440-62-2	Vanadium (except when contained in an alloy).	1/00
7440-66-6	Zinc (fume or dust).....	1/1/87
7550-45-0	Titanium tetrachloride.....	1/1/87
7632-00-0	Sodium nitrite.....	1/1/95
7637-07-2	Boron trifluoride.....	1/1/95
7647-01-0	Hydrochloric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size).....	1/1/87
7664-39-3	Hydrogen fluoride.....	1/1/87
7664-41-7	Ammonia (includes anhydrous ammonia and aqueous ammonia from water dissociable ammonium salts and other sources; 10 percent of total aqueous ammonia is reportable under this listing).....	1/1/87
7664-93-9	Sulfuric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size).....	1/1/87
7696-12-0	Tetramethrin [2,2-Dimethyl-3-(2-methyl-1-propenyl)cyclopropane-carboxylic acid (1,3,4,5,6,7-hexahydro-1,3-dioxo-2H-isoindol-2-yl)methyl ester].....	1/1/95
7697-37-2	Nitric acid.....	1/1/87
7723-14-0	Phosphorus (yellow or white).....	1/1/87
7726-95-6	Bromine.....	1/1/95
7758-01-2	Potassium bromate.....	1/1/95
7782-41-4	Fluorine.....	1/1/95
7782-49-2	Selenium.....	1/1/87
7782-50-5	Chlorine.....	1/1/87
7783-06-4	Hydrogen sulfide.....	1/1/94
7783-20-2	Ammonium sulfate (solution).....	1/1/87
8001-35-2	Toxaphene.....	1/1/87
8001-58-9	Creosote.....	1/1/90
7786-34-7	Mevinphos.....	1/1/95
7803-51-2	Phosphine.....	1/1/95
9006-42-2	Metiram.....	1/1/95
00079-94-7	Tetrabromobisphenol A.....	1/00
00191-24-2	Benzo(g,h,i)perylene.....	1/00

00608-93-5 Pentachlorobenzene..... 1/00
10028-15-6 Ozone..... 1/1/95
10034-93-2 Hydrazine sulfate..... 1/1/87
10049-04-4 Chlorine dioxide..... 1/1/87
10061-02-6 trans-1,3-Dichloropropene..... 1/1/95
10222-01-2 2,2-Dibromo-3-nitrilopropionamide..... 1/1/95
10294-34-5 Boron trichloride..... 1/1/95
10453-86-8 Resmethrin [[5-(Phenylmethyl)-3-furanyl]methyl 2,2-dimethyl-3-(2-methyl-1-propenyl)cyclopropanecarboxylate]]..... 1/1/95
12122-67-7 Zineb [Carbamodithioic acid, 1,2-ethanediylbis-, zinc complex]..... 1/1/87
12427-38-2 Maneb [Carbamodithioic acid, 1,2-ethanediylbis-, manganese complex]..... 1/1/87
13194-48-4 Ethoprop [Phosphorodithioic acid O-ethyl S,S-dipropyl ester]..... 1/1/95
13356-08-6 Fenbutatin oxide (hexakis(2-methyl-2-phenylpropyl)distannoxane)..... 1/1/95
13463-40-6 Iron pentacarbonyl..... 1/1/95
13474-88-9 1,1-Dichloro-1,2,2,3,3-pentafluoropropane (HCFC-225cc)..... 1/1/95
13684-56-5 Desmedipham..... 1/1/95
14484-64-1 Ferbam [Tris(dimethylcarbamo-dithioato-S,S')iron]..... 1/1/95
15972-60-8 Alachlor..... 1/1/95
16071-86-6 C.I. Direct Brown 95..... 1/1/87
16543-55-8 N-Nitrosonornicotine..... 1/1/87
17804-35-2 Benomyl..... 1/1/95
19044-88-3 Oryzalin [4-(Dipropylamino)-3,5-dinitrobenzene-sulfonamide]..... 1/1/95
19666-30-9 Oxydiazon [3-[2,4-Dichloro-5-(1-methylethoxy)phenyl]-5-(1,1-dimethylethyl)-1,3,4-oxadiazol-2(3H)-one]..... 1/1/95
20325-40-0 3,3'-Dimethoxybenzidine dihydrochloride (Dianisidine dihydrochloride)..... 1/1/95
20354-26-1 Methazole [2-(3,4-Dichlorophenyl)-4-methyl-1,2,4-oxadiazolidine-3,5-dione]..... 1/1/95
20816-12-0 Osmium tetroxide..... 1/1/87
20859-73-8 Aluminum phosphide..... 1/1/95
21087-64-9 Metribuzin..... 1/1/95
21725-46-2 Cyanazine..... 1/1/95
22781-23-3 Bendiocarb [2,2-Dimethyl-1,3-benzodioxol-4-ol 1/1/95

methylcarbamate].....
23564-05-8 Thiophanate methyl..... 1/1/95
23564-06-9 Thiophanate ethyl [[1,2- 1/1/95
Phenylenebis(iminocarbonothioyl)]biscarbamic
acid diethyl ester].....
23950-58-5 Pronamide..... 1/1/94
25311-71-1 Isofenphos [2-[[Ethoxyl[(1- 1/1/95
methylethyl)amino]phosphinothioyl]oxy]benzoi
c acid 1-methylethyl ester].....
25321-14-6 Dinitrotoluene..... 1/1/90
(mixed isomers).....
25321-22-6 Dichlorobenzene (mixed isomers)..... 1/1/87
25376-45-8 Diaminotoluene (mixed isomers)..... 1/1/87
26002-80-2 Phenothrin [2,2-Dimethyl-3-(2-methyl-1- 1/1/95
propenyl)cyclopropanecarboxylic acid (3-
phenoxyphenyl)methyl ester].....
26471-62-5 Toluenediisocyanate..... 1/1/90
(mixed isomers).....
26628-22-8 Sodium azide..... 1/1/95
26644-46-2 Triforine [N,N'-[1,4-Piperazinediylbis(2,2,2- 1/1/95
trichloroethylidene)] bisformamide].....
27314-13-2 Norflurazon [4-Chloro-5-(methylamino)-2-[3- 1/1/95
(trifluoromethyl)phenyl]- 3(2H)-
pyridazinone].....
28057-48-9 d-trans-Allethrin [d-trans-Chrysanthemic acid 1/1/95
of d-allethrone].....
28249-77-6 Thiobencarb [Carbamic acid, diethylthio-, s- 1/1/95
(p-chlorobenzyl)].....
28407-37-6 C.I. Direct Blue 218..... 1/1/95
29082-74-4 Octachlorostyrene..... 1/00
29232-93-7 Pirimiphos methyl [O-(2-(Diethylamino)-6- 1/1/95
methyl-4-pyrimidinyl)-O,O-dimethyl
phosphorothioate].....
30560-19-1 Acephate (Acetylphosphoramidothioic acid O,S- 1/1/95
dimethyl ester).....
31218-83-4 Propetamphos [3- 1/1/95
[[(Ethylamino)methoxyphosphino-thioyl]oxy]-2-
butenoic acid, 1-methylethyl ester].....
33089-61-1 Amitraz..... 1/1/95
34014-18-1 Terbuthiuron [N-[5-(1,1-Dimethylethyl)-1,3,4- 1/1/95
thiadiazol-2-yl)-N,N'- dimethylurea].....
34077-87-7 Dichlorotrifluoroethane..... 1/1/94

35367-38-5 Diflubenzuron..... 1/1/95
35400-43-2 Sulprofos [O-Ethyl O-[4- (methylthio)phenyl]phosphorodithioic acid S-propyl ester]..... 1/1/95
35554-44-0 Imazalil [1-[2-(2,4-Dichlorophenyl)-2-(2-propenyloxy)ethyl]-1H-imidazole]..... 1/1/95
35691-65-7 1-Bromo-1-(bromomethyl)-1,3-propanedicarbonitrile..... 1/1/95
38727-55-8 Diethatyl ethyl..... 1/1/95
39156-41-7 2,4-Diaminoanisole sulfate..... 1/1/87
39300-45-3 Dinocap..... 1/1/95
39515-41-8 Fenpropathrin [2,2,3,3-Tetramethylcyclopropane carboxylic acid cyano(3-phenoxyphenyl)methyl ester]..... 1/1/95
40487-42-1 Pendimethalin [N-(1-Ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzen-amine]..... 1/1/95
41198-08-7 Profenofos [O-(4-Bromo-2-chlorophenyl)-O-ethyl-S-propyl phosphorothioate]..... 1/1/95
41766-75-0 3,3'-Dimethylbenzidine dihydrofluoride (ortho-Tolidine dihydrofluoride)..... 1/1/95
42874-03-3 Oxyfluorfen..... 1/1/95
43121-43-3 Triadimefon [1-(4-Chlorophenoxy)-3,3-dimethyl-1-(1H-1,2,4-triazol-1-yl)-2-butanone]..... 1/1/95
50471-44-8 Vinclozolin [3-(3,5-Dichlorophenyl)-5-ethenyl-5-methyl-2,4- oxazolidinedione]..... 1/1/95
51235-04-2 Hexazinone..... 1/1/95
51338-27-3 Diclofop methyl [2-[4-(2,4-Dichlorophenoxy)phenoxy]propanoic acid, methyl ester]..... 1/1/95
51630-58-1 Fenvalerate..... 1/1/95
52645-53-1 Permethrin [3-(2,2-Dichloroethenyl)-2,2-dimethylcyclopropanecarboxylic acid, (3-phenoxyphenyl)methyl ester]..... 1/1/95
53404-19-6 Bromacil, lithium salt [2,4-(1H,3H)-Pyrimidinedione, 5-bromo-6-methyl-3- (1-methylpropyl), lithium salt]..... 1/1/95
53404-37-8 2,4-D 2-ethyl-4-methylpentyl ester..... 1/1/95
53404-60-7 Dazomet, sodium salt [Tetrahydro-3,5-dimethyl-2H-1,3,5-thiadiazine-2-thione, ion(1-), sodium]..... 1/1/95
55290-64-7 Dimethipin [2,3,-Dihydro-5,6-dimethyl-1,4-dithiin 1,1,4,4-tetraoxide]..... 1/1/95

55406-53-6 3-Iodo-2-propynyl butylcarbamate..... 1/1/95
57213-69-1 Triclopyr, triethylammonium salt..... 1/1/95
59669-26-0 Thiodicarb..... 1/1/95
60168-88-9 Fenarimol [.alpha.-(2-Chlorophenyl)-.alpha.-4- chlorophenyl)-5-pyrimidine- methanol]..... 1/1/95
60207-90-1 Propiconazole [1-[2-(2,4-Dichlorophenyl)-4- propyl-1,3-dioxolan-2-yl]-methyl-1H-1,2,4,- triazole]..... 1/1/95
62476-59-9 Acifluorfen, sodium salt [5-(2-Chloro-4- (trifluoromethyl) phenoxy)-2-nitrobenzoic acid, sodium salt]..... 1/1/95
62924-70-3 Flumetralin [2-Chloro-N-(2,6-dinitro-4- (trifluoromethyl)-phenyl)-N-ethyl-6- fluorobenzenemethanamine]..... 1/1/95
63938-10-3 Chlorotetrafluoroethane..... 1/1/94
64902-72-3 Chlorsulfuron [2-chloro-N-[[4-methoxy-6- methyl-1,3,5-triazin-2-yl)amino] carbonyl]benzenesulfonamide]..... 1/1/95
64969-34-2 3,3'-Dichlorobenzidine.sulfate..... 1/1/95
66441-23-4 Fenoxaprop ethyl [2-(4-((6-Chloro-2- benzoxazolylen)oxy)phenoxy) propanoic acid, ethyl ester]..... 1/1/95
67485-29-4 Hydramethylnon [Tetrahydro-5,5-dimethyl-2(1H)- pyrimidinone[3-[4- (trifluoromethyl)phenyl]- 1-[2-[4-(trifluoromethyl)phenyl]ethenyl]-2- propenylidene]hydrazone]..... 1/1/95
68085-85-8 Cyhalothrin [3-(2-Chloro-3,3,3-trifluoro-1- propenyl)-2,2- dimethylcyclopropanecarboxylic acid cyano(3- phenoxyphenyl)methyl ester]..... 1/1/95
68359-37-5 Cyfluthrin [3-(2,2-Dichloro-ethenyl)-2,2- dimethylcyclo-propanecarboxylic acid, cyano(4-fluoro-3-phenoxyphenyl)methyl ester] 1/1/95
69409-94-5 Fluvalinate [N-[2-Chloro-4- (trifluoromethyl)phenyl]-DL-valine(+)- cyano(3-phenoxyphenyl)methylester]..... 1/1/95
69806-50-4 Fluazifop-butyl [2-[4-[[5-(Trifluoromethyl)-2- pyridinyl]oxy]-phenoxy]propanoic acid, butyl ester]..... 1/1/95
71751-41-2 Abamectin [Avermectin B1]..... 1/1/95
72178-02-0 Fomesafen [5-(2-Chloro-4- (trifluoromethyl)phenoxy)-N-methylsulfonyl)- 1/1/95

	2- nitrobenzamide].....	
72490-01-8	Fenoxycarb [2-(4-Phenoxyphenoxy)ethyl]carbamic acid ethyl ester].....	1/1/95
74051-80-2	Sethoxydim [2-[1-(Ethoxyimino)butyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-one].....	1/1/95
76578-14-8	Quizalofop-ethyl [2-[4-[(6-Chloro-2-quinoxalinyl)oxy]phenoxy] propanoic acid ethyl ester].....	1/1/95
77501-63-4	Lactofen [5-(2-Chloro-4-(trifluoromethyl)phenoxy)-2-nitro-2-ethoxy-1-methyl-2-oxoethyl ester].....	1/1/95
82657-04-3	Bifenthrin.....	1/1/95
88671-89-0	Myclobutanil [.alpha.-Butyl-.alpha.-(4-chlorophenyl)-1H-1,2,4-triazole- 1-propanenitrile].....	1/1/95
90454-18-5	Dichloro-1,1,2-trifluoroethane.....	1/1/94
90982-32-4	Chlorimuron ethyl [Ethyl-2-[[[(4-chloro-6-methoxyprimidin-2-yl)-carbonyl]-amino]sulfonyl]benzoate].....	1/1/95
101200-48-0	Tribenuron methyl [2-(((((4-Methoxy-6-methyl-1,3,5-triazin-2-yl)-methylamino)carbonyl)amino)sulfonyl)-, methyl ester].....	1/1/95
111512-56-2	1,1-dichloro-1,2,3,3,3-pentafluoropropane (HCFC-225eb).....	1/1/95
111984-09-9	3,3'-Dimethoxybenzidine hydrochloride (Dianisidine dihydrochloride).....	1/1/95
127564-92-5	Dichloropentafluoropropane.....	1/1/95
128903-21-9	2,2-Dichloro-1,1,1,3,3-pentafluoropropane (HCFC-225aa).....	1/1/95
136013-79-1	1,3-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225ea).....	1/1/95

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*Note: CAS No. 6484-52-2 is removed from this listing; the removal is effective July 2, 1995, for the 1995 reporting year.

*Note: The listing of 2,2-dibromo-3-nitrilopropionamide (DBNPA)(CAS No. 10222-01-2) is stayed. The stay will remain in effect until further administrative action is taken.

(c) Chemical categories in alphabetical order.

Category name	Effective date
Antimony Compounds: Includes any unique chemical substance that contains antimony as part of that chemical's infrastructure.....	1/1/87
Arsenic Compounds: Includes any unique chemical substance that contains arsenic as part of that chemical's infrastructure.....	1/1/87
Barium Compounds: Includes any unique chemical substance that contains barium as part of that chemical's infrastructure (except for barium sulfate, (CAS No. 7727-43-7).....	1/1/87
Beryllium Compounds: Includes any unique chemical substance that contains beryllium as part of that chemical's infrastructure.....	1/1/87
Cadmium Compounds: Includes any unique chemical substance that contains cadmium as part of that chemical's infrastructure.....	1/1/87
Chlorophenols.....	1/1/87

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Where x=1 to 5

Category name	Effective date
Chromium Compounds: Includes any unique chemical substance that contains chromium as part of that chemical's infrastructure (except for chromite ore mined in the	1/1/87

Transvaal Region of South Africa and the unreacted ore component of the chromite ore processing residue (COPR). COPR is the solid waste remaining after aqueous extraction of oxidized chromite ore that has been combined with soda ash and kiln roasted at approximately 2,000 deg.F.).....

Cobalt Compounds: Includes any unique chemical substance that contains cobalt as part of that chemical's infrastructure... 1/1/87

Copper Compounds: Includes any unique chemical substance that contains copper as part of that chemical's infrastructure (except for C.I. Pigment Blue 15 (PB-15, CAS No. 147-14-8), C.I. Pigment Green 7 (PG-7, CAS No. 1328-53-6), and C.I. Pigment Green 36 (PG-36, CAS No. 14302-13-7) except copper phthalocyanine compounds that are substituted with only hydrogen and/or bromine and/or chlorine that meet the following molecular structure definition:..... 1/1/87

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where R = H and/or Br and/or Cl only."

Category name	Effective date
Cyanide Compounds: X⁼ CN⁻ where X = H⁻ or any other group where a formal dissociation can be made. For example KCN, or Ca(CN)<INF>2</INF>.....	1/1/87
Diisocyanates (This category includes only those chemicals listed below).....	1/1/95
038661-72-2 1,3-Bis(methylisocyanate)cyclohexane	
010347-54-3 1,4-Bis(methylisocyanate)cyclohexane	
002556-36-7 1,4-Cyclohexane diisocyanate	
134190-37-7 Diethyldiisocyanatobenzene	
004128-73-8 4,4'-Diisocyanatodiphenyl ether	

075790-87-3 2,4'-Diisocyanatodiphenyl sulfide
000091-93-0 3,3'-Dimethoxybenzidine-4,4'-diisocyanate
000091-97-4 3,3'-Dimethyl-4,4'-diphenylene diisocyanate
000139-25-3 3,3'-Dimethyldiphenylmethane-4,4'-diisocyanate
000822-06-0 Hexamethylene-1,6-diisocyanate
004098-71-9 Isophorone diisocyanate
075790-84-0 4-Methyldiphenylmethane-3,4-diisocyanate
005124-30-1 1,1-Methylene bis(4-isocyanatocyclohexane)
000101-68-8 Methylenebis(phenylisocyanate) (MDI)
003173-72-6 1,5-Naphthalene diisocyanate
000123-61-5 1,3-Phenylene diisocyanate
000104-49-4 1,4-Phenylene diisocyanate
009016-87-9 Polymeric diphenylmethane diisocyanate
016938-22-0 2,2,4-Trimethylhexamethylene diisocyanate
015646-96-5 2,4,4-Trimethylhexamethylene diisocyanate

Dioxin and dioxin-like compounds (Manufacturing; and the processing or otherwise use of dioxin and dioxin-like compounds if the dioxin and dioxin-like compounds are present as contaminants in a chemical and if they were created during the manufacturing of that chemical) (This category includes only those chemicals listed below) 1/00

67562-39-4 1,2,3,4,6,7,8-Heptachlorodibenzofuran
55673-89-7 1,2,3,4,7,8,9-Heptachlorodibenzofuran
70648-26-9 1,2,3,4,7,8-Hexachlorodibenzofuran
57117-44-9 1,2,3,6,7,8-Hexachlorodibenzofuran
72918-21-9 1,2,3,7,8,9-Hexachlorodibenzofuran
60851-34-5 2,3,4,6,7,8-Hexachlorodibenzofuran
39227-28-6 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin
57653-85-7 1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin
19408-74-3 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin
35822-46-9 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin
39001-02-0 1,2,3,4,6,7,8,9-Octachlorodibenzofuran
03268-87-9 1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin
57117-41-6 1,2,3,7,8-Pentachlorodibenzofuran
57117-31-4 2,3,4,7,8-Pentachlorodibenzofuran
40321-76-4 1,2,3,7,8-Pentachlorodibenzo-p-dioxin
51207-31-9 2,3,7,8-Tetrachlorodibenzofuran
01746-01-6 2,3,7,8-Tetrachlorodibenzo-p-dioxin

Ethylenebisdithiocarbamic acid, salts and esters..... 1/1/94

Certain Glycol Ethers..... 1/1/95

R - (OCH<INF>2</INF> CH<INF>2</INF>)<INF>n</INF> - OR'

Where:
n = 1, 2, or 3;
R = alkyl C7 or less; or
R = phenyl or alkyl substituted phenyl;
R' = H or alkyl C7 or less; or
OR' consisting of carboxylic acid ester, sulfate, phosphate, nitrate, or sulfonate.

Lead Compounds: Includes any unique chemical substance that contains lead as part of that chemical's infrastructure..... 1/1/87

Manganese Compounds: Includes any unique chemical substance that contains manganese as part of that chemical's infrastructure..... 1/1/87

Mercury Compounds: Includes any unique chemical substance that contains mercury as part of that chemical's infrastructure..... 1/1/87

Nicotine and salts..... 1/1/95

Nitrate compounds (water dissociable; reportable only when in aqueous solution)..... 1/1/95

Nickel Compounds: Includes any unique chemical substance that contains nickel as part of that chemical's infrastructure... 1/1/87

Polybrominated Biphenyls (PBBs)..... 1/1/87

Polychlorinated alkanes (C<INF>10</INF> to C<INF>13</INF>): Includes those chemicals defined by the following formula: 1/1/95

C<INF>x</INF> H<INF>2x-y=2</INF> Cl<INF>y</INF>
where x= 10 to 13;
y= 3 to 12; and
where the average chlorine content ranges from 40-70% with the limiting molecular formulas C<INF>10</INF> H<INF>19</INF> Cl<INF>3</INF> and C<INF>13</INF> H<INF>16</INF> Cl<INF>12</INF>.

Polycyclic aromatic compounds (PACs): (This category includes only those chemicals listed below)..... 1/1/95

00056-55-3 Benz(a)anthracene
00218-01-9 Benzo(a)phenanthrene
00050-32-8 Benzo(a)pyrene
00205-99-2 Benzo(b)fluoranthene
00205-82-3 Benzo(j)fluoranthene
00207-08-9 Benzo(k)fluoranthene
00206-44-0 Benzo(j,k)fluorene 1/00
00189-55-9 Benzo(rst)pentaphene
00226-36-8 Dibenz(a,h)acridine

00224-42-0	Dibenz(a,j)acridine	
00053-70-3	Dibenzo(a,h)anthracene	
05385-75-1	Dibenzo(a,e)fluoranthene	
00192-65-4	Dibenzo(a,e)pyrene	
00189-64-0	Dibenzo(a,h)pyrene	
00191-30-0	Dibenzo(a,l)pyrene	
00194-59-2	7H-Dibenzo(c,g)carbazole	
00057-97-6	7,12-Dimethylbenz(a)anthracene	
00193-39-5	Indeno[1,2,3-cd]pyrene	
00056-49-5	3-Methylcholanthrene	1/00
03697-24-3	5-Methylchrysene	
05522-43-0	1-Nitropyrene	

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Where x=1 to 10

Category name	Effective date
Selenium Compounds: Includes any unique chemical substance that contains selenium as part of that chemical's infrastructure.....	1/1/87
Silver Compounds: Includes any unique chemical substance that contains silver as part of that chemical's infrastructure...	1/1/87
Strychnine and salts.....	1/1/95
Thallium Compounds: Includes any unique chemical substance that contains thallium as part of that chemical's infrastructure.....	1/1/87
Vanadium compounds.....	1/00
Warfarin and salts.....	1/1/94
Zinc Compounds: Includes any unique chemical substance that contains zinc as part of that chemical's infrastructure.....	1/1/87

§ 372.85 Toxic chemical release reporting form and instructions.

(a) Availability of reporting form and instructions. The most current version of EPA Form R (EPA Form 9350-1 and subsequent revisions) and the instructions for completing this form may be obtained by writing to the Section 313 Document Distribution Center, P.O. Box 12505, Cincinnati, OH 45212. EPA also encourages facilities subject to this part to submit the required information to EPA by using magnetic media (computer disk or tape) in lieu of Form R. Instructions for submitting and using magnetic media may also be obtained from the address given in this paragraph.

(b) Form elements. Information elements reportable on EPA Form R or equivalent magnetic media format include the following:

(1) An indication of whether the report:

(i) Claims chemical identity as trade secret.

(ii) Covers the entire facility or part of a facility.

(2) Signature of a senior management official certifying the following: "I hereby certify that I have reviewed the attached documents and, to the best of my knowledge and belief, the submitted information is true and complete and that amounts and values in this report are accurate based upon reasonable estimates using data available to the preparer of the report."

(3) Facility name and address including the toxic chemical release inventory facility identification number if known.

(4) Name and telephone number for both a technical contact and a public contact.

(5) The four-digit SIC code(s) for the facility or establishments in the facility.

(6) Latitude and longitude coordinates for the facility.

(7) The following facility identifiers:

(i) Dun and Bradstreet identification number.

(ii) EPA identification number (RCRA I.D. Number).

(iii) NPDES permit number.

(iv) Underground Injection Well Code (UIC) identification number.

(8) The name(s) of receiving stream(s) or water body to which the chemical is released.

(9) Name of the facility's parent company and its Dun and Bradstreet identification number.

(10) Name and CAS number (if applicable) of the chemical reported.

(11) If the chemical identity is claimed trade secret, a generic name for the chemical.

(12) A mixture component identity if the chemical identity is not known.

(13) An indication of the activities and uses of the chemical at the facility.

(14) An indication of the maximum amount of the chemical on site at any point in time during the reporting
year.

(15) Information on releases of the chemical to the environment as follows:

(i) An estimate of total releases in pounds (except for dioxin and dioxin-like compounds, which shall be
reported in grams) per year (releases of less than 1,000 pounds per year may be indicated in ranges, except
for chemicals set forth in § 372.28) from the facility plus an indication of the basis of estimate for the
following:

(A) Fugitive or non-point air emissions.

(B) Stack or point air emissions.

(C) Discharges to receiving streams or water bodies including an indication of the percent of releases due to

stormwater.

(D) Underground injection on site.

(E) Releases to land on site.

(ii) Report a distribution of the chemicals included in the dioxin and dioxin-like compounds category. Such distribution shall either represent the distribution of the total quantity of dioxin and dioxin-like compounds released to all media from the facility; or its one best media-specific distribution.

(16) Information on transfers of the chemical in wastes to off-site locations as follows:

(i) For transfers to Publicly Owned Treatment Works (POTW):

(A) The name and address (including county) of each POTW to which the chemical is transferred.

(B) An estimate of the amount of the chemical transferred in pounds (except for dioxin and dioxin-like compounds, which shall be reported in grams) per year (transfers of less than 1,000 pounds per year may be indicated as a range, except for chemicals set forth in § 372.28) and an indication of the basis of the estimate.

(ii) For transfers to other off-site locations:

(A) The name, address (including county), and EPA identification number (RCRA I.D. Number) of each off-site location, including an indication of whether the location is owned or controlled by the reporting facility or its parent company.

(B) An estimate of the amount of the chemical in waste transferred in pounds (except for dioxin and dioxin-like compounds, which shall be reported in grams) per year (transfers of less than 1,000 pounds may be indicated in ranges, except for chemicals set forth in § 372.28) to each off-site location, and an indication of the basis for the estimate and an indication of the type of treatment or disposal used.

(17) The following information relative to waste treatment:

(i) An indication of the general type of wastestream containing the reported chemical.

(ii) The treatment method applied to the wastestream.

(iii) An indication of the concentration of the chemical in the wastestream prior to treatment.

(iv) An estimate in percent of the efficiency of the treatment plus an indication of whether the estimate is
based upon operating data.

(v) An indication (use is optional) of whether treatments listed are part of a treatment sequence.

(18) Pollution prevention data (reporting is optional) which includes the type of pollution prevention
modification, quantity of the chemical in the wastes prior to treatment and disposal (for both the current and
prior reporting year), a production index, and the reason for the pollution prevention action. This optional
reporting expires after the 1990 reporting year.

§ 372.95 Alternate threshold certification and instructions.

(a) Availability of the alternate threshold certification statement and instructions. Availability of the
alternate threshold certification statement and instructions is the same as provided in § 372.85(a) for
availability of the reporting form and instructions.

(b) Alternate threshold certification statement elements. The following information must be reported on
an alternate threshold certification statement pursuant to § 372.27(b):

(1) Reporting year.

(2) An indication of whether the chemical identified is being claimed as trade secret.

(3) Chemical name and CAS number (if applicable) of the chemical, or the category name.

(4) Signature of a senior management official certifying the following: pursuant to 40 CFR 372.27, "I hereby

certify that to the best of my knowledge and belief for the toxic chemical listed in this statement, the annual
reportable amount, as defined in 40 CFR 372.27(a), did not exceed 500 pounds for this reporting year and
that the chemical was manufactured, or processed, or otherwise used in an amount not exceeding 1 million
pounds during this reporting year."

(5) Date signed.

(6) Facility name and address.

(7) Mailing address of the facility if different than paragraph (b)(6) of this section.

(8) Toxic chemical release inventory facility identification number if known.

(9) Name and telephone number of a technical contact.

(10) The four-digit SIC codes for the facility or establishments in the facility.

(11) Latitude and longitude coordinates for the facility.

(12) Dun and Bradstreet Number of the facility.

(13) EPA Identification Number(s) (RCRA) I.D. Number(s) of the facility.

(14) Facility NPDES Permit Number(s).

(15) Underground Injection Well Code (UIC) I.D. Number(s) of the facility.

(16) Name of the facility's parent company.

(17) Parent company's Dun and Bradstreet Number.

ATTACHMENT F

Toxic Chemical Release Inventory Reporting Form (EPA 9350-1)
(Proposed Revision)

(Note: An electronic copy of this attachment is not available. Please contact the Environmental Protection Agency at the address noted in the Federal Register notice for a complete copy of this ICR.)

November, 2002

ATTACHMENT G

Responses to Comments Received
[OEI-10015; 67 FR44213]

November, 2002

ATTACHMENT H

EPA ICR 1363.10 - ICR Amendment for Final Rule
Reporting Threshold for PBT Chemicals

(Note: An electronic copy of this attachment is not available. Please contact the Environmental Protection Agency at the address noted in the Federal Register notice for a complete copy of this ICR.)

November, 2002

ATTACHMENT I

EPA ICR 1363.11 - ICR Amendment for Final Rule
Reporting Threshold for Lead

(Note: An electronic copy of this attachment is not available. Please contact the Environmental Protection Agency at the address noted in the Federal Register notice for a complete copy of this ICR.)